

AMERICAN FRUIT GROWER

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No. 9



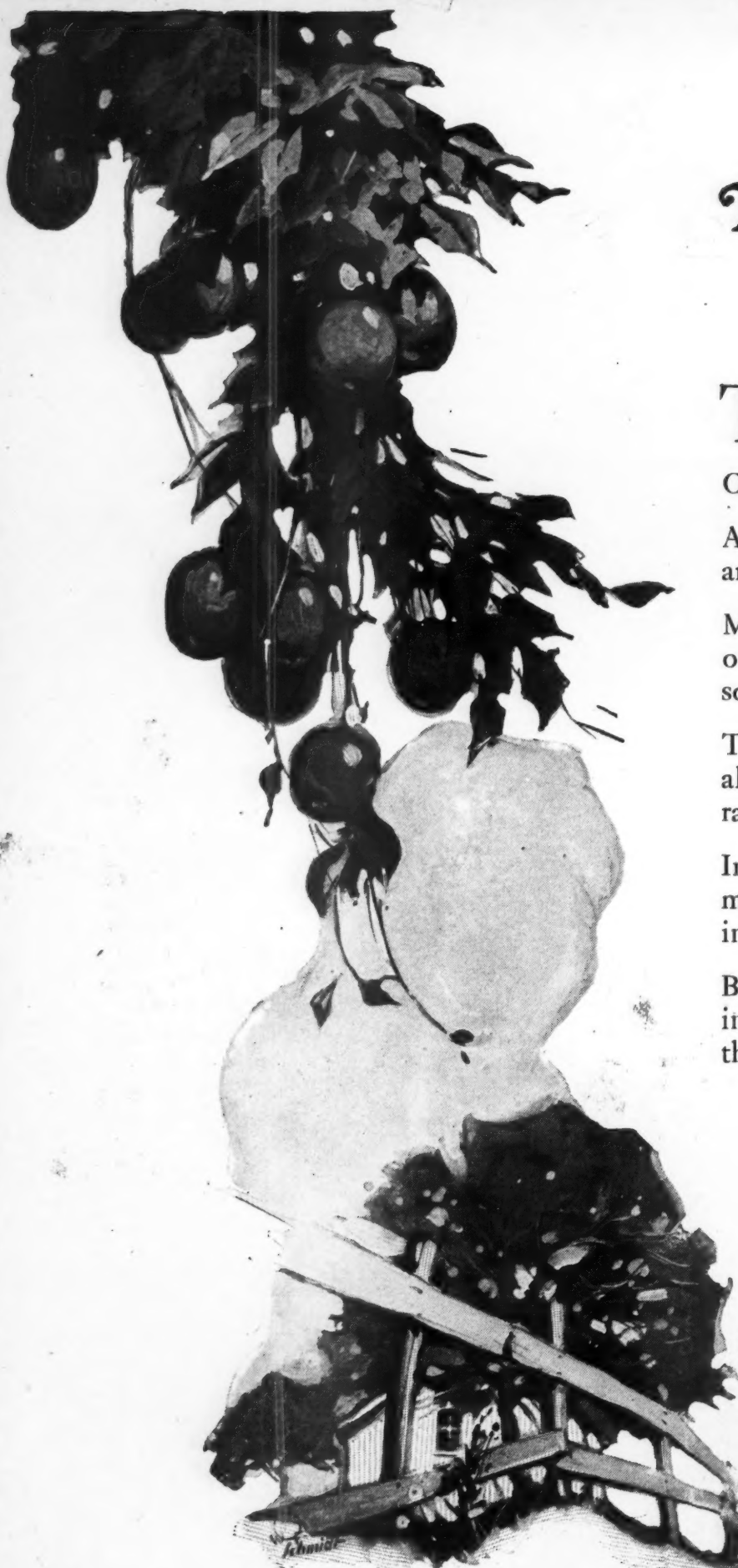
September 1919



Ten Cents
A Copy



Edited by Samuel Adams



The Comfort Car



THERE are several reasons why the Hupmobile is regarded as an especially stable value.

One, of course, is the car's uncommon quality.

Another is that pronounced yearly changes are avoided.

Mechanical and general designs, as worked out in the beginning, have proved basically sound and right.

The result is that the Hupmobile is exceptionally long-lived; and that there is no need for radical engineering revision from year to year.

In addition, the Hupmobile always commands an unusually high second-sale price, in proportion to first cost.

Buyers, therefore, feel that their investment in *The Comfort Car* is subject to much less than the average depreciation.

Hupmobile



The Winchester pattern. 250 pellets out of a possible 431, or 74% of the shot charge, evenly distributed; no birds get through

How big a bag will you bring back?

THE difference between a bulging bag and a lean one is often a question of gun and shells and not of shooting skill.

Make sure you have the right game-getting combination—shells that kill when the aim is true, and a gun that enables the shell to make its best pattern.

Good shell patterns are either *allowed* or *prevented* by the character of the gun barrel—the chamber, bore and choke.

Faulty chambering even more than faulty choking tends to mash and "ball" the shot, making pellets fall short or fly wide.

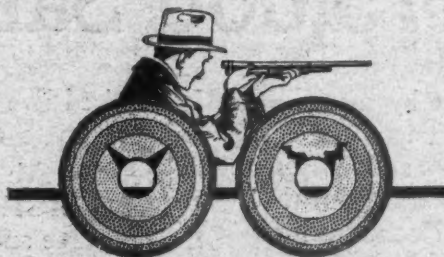
And if a gun is faulty in its most vital part, the chamber, the chances are that the bore is also carelessly made.

From chamber to choke, the barrels of the famous Winchester Repeaters are bored to make the shell throw its highest pattern. They are free from shot-jamming defects. They let the shell do its full work.

"Line" test the barrel

Point a Winchester barrel toward the light and look through the bore. It looks like a highly polished mirror. Not a false shadow

throughout the bore. Sight through the bore at a horizontal black line on the window. This line will throw a "V" shadow in the bore. Tilt the barrel till the point of the "V"



The "Line" test

Perfect bore of Winchester Irregularities revealed in barrel revealed under inferior shotgun barrel under "Line" test.

touches the muzzle. The perfect "V" shows absence of irregularities.

This is the "Line" test of a perfect bore. No faulty barrel can pass this test—the "V" will be distorted.

What means

This mark on a Winchester barrel means that the gun has passed the "Winchester

Provisional and Definitive Proof" test, having been fired many times for smooth action and accuracy, and strength-tested by firing 25 to 40 per cent excess loads. This stamp stands for Winchester's guarantee of quality, with 50 years of the best gun-making reputation behind it.

Your dealer will show you

Winchester Guns and Ammunition

Before you take to the woods this Fall, get your dealer to show you a Winchester Repeater—Model 97 for hammer action; Model 12 for hammerless. Put one to your shoulder, try its balance; see how beautifully it handles. Your sportsman's instinct will tell you it's the best weapon you could choose. Leading hardware and sporting goods dealers in every community carry Winchester Arms and Ammunition. They will be glad to assist you in selecting the gun best suited to your needs. Upon request, we will mail you, free of charge, the complete catalog of Winchester guns and loaded shells.

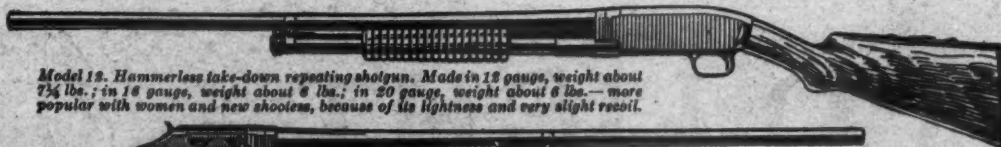
WINCHESTER REPEATING ARMS CO.

Dept. 143 New Haven

Conn., U. S. A.

Important Notice

The chamber, bore and muzzle choke of all Winchester Shotguns are reamed to micrometer measurements for the particular Winchester Shells they are meant to shoot. You will get the highest and most uniform pattern results by shooting Winchester shells in Winchester guns. The two are made for each other.



Model 12. Hammerless take-down repeating shotgun. Made in 12 gauge, weight about 7 3/4 lbs.; in 16 gauge, weight about 6 lbs.; in 20 gauge, weight about 5 lbs.—more popular with women and new shooters, because of its lightness and very slight recoil.



Model 97. Take-down repeating shotgun. Made in 12 gauge, weight about 7 3/4 lbs.; in 16 gauge, weight about 7 1/2 lbs. The favorite with shooters who prefer a slide forearm repeating shotgun with a hammer.

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World Standard Guns and Ammunition



**Every Dot
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Satisfied
Delco-Light Users**

More Than 75,000 Satisfied Users

DELCO-LIGHT was designed and built by men who were raised in farm homes—who experienced the discomforts and inconveniences of farm life—and who set out deliberately years ago to develop an electric plant that would provide city advantages for rural communities. They were the same men whose engineering talent had made DELCO Starting, Lighting and Ignition Equipment for automobiles the standard of the world—

They knew electricity—and they knew the needs and limitations of farm life—

They knew that an electric plant to give service in a farm home must be simple, so that it would not get out of order and require complicated repairs—

It must be easily operated and require little attention—

It must be very economical in operation—

It must be built to stand hard usage and it must last indefinitely.

It required five years to develop a plant that would measure up to these specifications.

There were five years of hard engineering effort back of DELCO-LIGHT before the first plant was put on the market three and a half years ago.

Today DELCO-LIGHT is furnishing the conveniences and comforts of electricity to more than Seventy-five Thousand farm homes.

It is providing an abundance of clean, bright, economical electric light for these homes. It is furnishing power to pump water, operate washing machine, churn, separator, vacuum cleaner, electric iron, milking machine, and other small machinery.

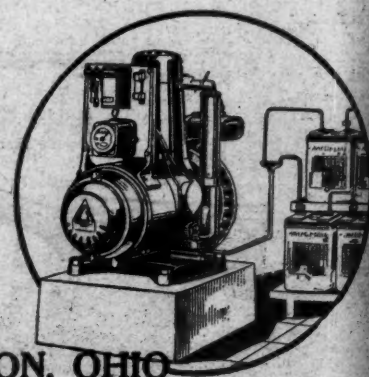
And everywhere it is demonstrating its wonderful efficiency—and actually paying for itself in time and labor saved.

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*A complete electric light and power plant for farms and country homes,
self-cranking—air-cooled—ball bearings—no belts—only one place to
Oil—Thick Plates—Long Lived Battery—RUNS ON KEROSENE.*

THE DOMESTIC ENGINEERING COMPANY, DAYTON, OHIO

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SEPTEMBER, 1919

No. 9

Tractor Experiences and Tractor Pointers

Remarks on Evidence Collected from 750 Tractor Owners

By H. C. Ramsower, Ohio State University

THE DAY of power farming is just beginning to dawn on Eastern farms, in fact, on farms and farmers world over. Circumstances of giant proportions have forced the issue and men who till the soil are giving more serious consideration than ever before to the problem of the conservation of human energy. Did you ever stop to consider that human energy so lavishly used in the past, the most expensive source of power in common use on the farms of the United States?

There is much of our work, of course, that can never be done except with human hands but there is also much of it now performed by man labor that could and should be done in other ways. We have become accustomed to hitching two horses to a 14-inch walking plow and wearily walking through a furrow eight miles long to plow an acre that we begin to feel there is no other way of accomplishing this task. With a demand for labor never felt before, with a remarkable shortage of men for industrial positions the world over it behoves us to make substitutes of mechanical power for man power whenever and wherever it can be done.

The farm tractor with its remarkable possibilities offers at least a partial solution for this vexing question. We turn to it first of all, perhaps, because it enables us to place under the command of a single man and a single pair of hands an available source of power equal to that of from 10 to 20 horses. Again, we turn to the tractor because it is a tireless worker which marks not the limits set by the sun and setting sun. Also the fact that it does not eat when idle is very much in its favor.

No one who approaches this question from an unbiased point of view presumes to agree that there is a place for a tractor on every farm nor that will replace all or even a large proportion of the horses on our farms. Complete substitution for horsepower is for some generation other than ours to realize.

The purchase of a tractor for any farm involves no inconsiderable increase in overhead expense and should be carefully

considered before made. The experiences of many bona fide owners and operators as it is possible to obtain should be studied in an effort to answer the question, "Can I afford to own a tractor?" The purpose of this article is to offer for your consideration a brief study of the experiences of 750 tractor owners in Ohio.

Does the use of the tractor actually re-

sult in a saving of man labor? Six hundred and nine men reported that it did; ninety that it did not. Thus 88 per cent feel that their expenditures for labor were materially decreased. Many reported that their requirements were reduced one-half while others said that they were doing twice as much work with the same man force.

Six hundred and fifty-six farmers de-

clare that their tractor had proved to be a good investment while sixty-nine felt that it had not. It is to be expected that some men will not succeed in using a tractor in an economical way. Perhaps their farms were too small, or poorly arranged, or incompletely drained. Possibly a poor "buy" brought a cheap tractor to the farm, one still in the experimental stage, only to be operated by one not accustomed to such work and not capable of being trained.

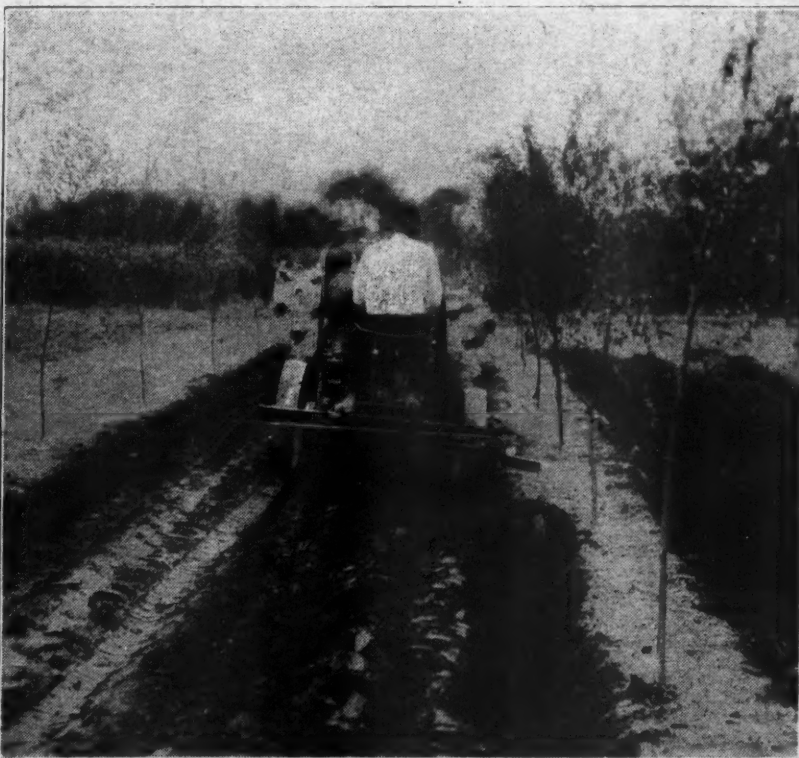
So far as reliability of tractors is concerned 86 per cent of the 716 owners replying stated that their machines had proven reliable at all times. One must expect to have trouble with tractors. They have many delicate parts and are expected to perform the most difficult tasks under widely varying conditions of both soil and weather. The above percentage of favorable replies indicates that with reasonable intelligent handling tractors generally may be depended upon.

Number of Days Used

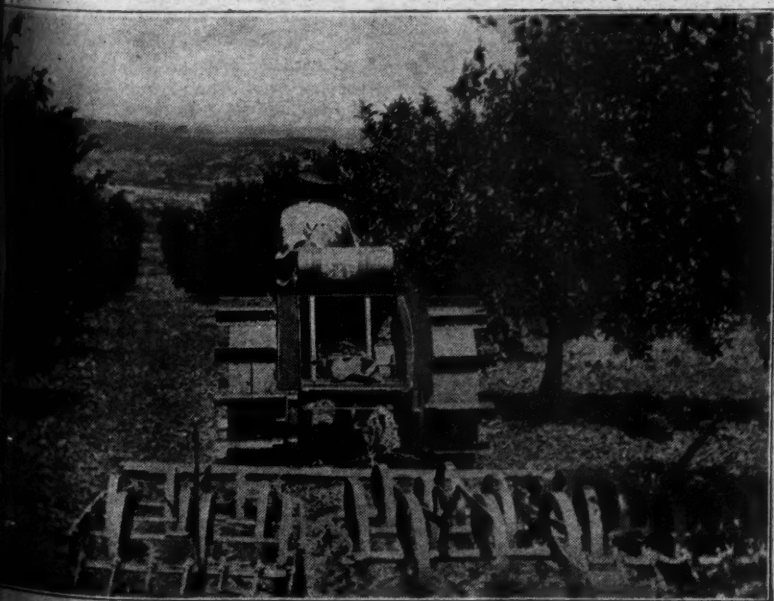
Owners who have used their tractors the largest number of days each year generally realized the highest return on their investments. The number of days of use varied from 32 to 91 as an average, for the different makes of machines. A few individual machines were used as many as 200 days per year. Such evidence goes to show that we are just learning how to use farm tractors so as to keep them busy throughout the year.

The uses to which the tractor is now being put is further evidence that it is something more than a tool for plowing and fitting the soil. Twenty-six of the owners reporting are using their machines for cutting hay; two hundred and forty-six for pulling wagon and hay loader; two hundred and forty-four for cutting wheat or oats; three hundred and twenty-four for grinding; three hundred and nineteen for filling silos; one hundred and six for baling hay; and one hundred and ten for threshing grain. A large number of miscellaneous uses were also reported.

Many tractor men have agreed that we should not expect the tractor to replace



Moline Tractor Cultivating a Young Orchard



An Avery Tractor Pulling a Three Section Spring Tooth Harrow



Huber Tractor Preparing Field for an Orchard

any of the horses on the farm but that it should be used to take the "peak" load, to help out in pinches and to ease the work of the horses. Seventy-five per cent of the farmers reporting on the question said that they were now doing the same or more work with fewer horses than before the tractor was purchased. Two horses on an average were replaced by 2-bottom rigs and 2.1 horses by 3-bottom rigs. The greatest number of horses was replaced on the larger farms. As a rule it may be said that the number of horses necessary will be determined by the number needed to cultivate the corn. The two-row cultivator will be found helpful in getting through this rush season and its use will become more common when its advantages and its efficiency are better understood.

Speed and Horses

The relatively smaller number of horses replaced by 3-bottom as compared to 2-bottom rigs is interesting. As bearing further on this question the speed of the tractor seems to influence the number of horses replaced. In this survey tractors having a speed of more than three miles per hour replaced an average of 2.8 horses per machine while those with a speed of 3 miles and under replaced an average of 1.7 horses per machine. This result seems to argue for the high speed machine. Inasmuch as there are many things to be considered other than the replacement of horses too much weight should not be placed on this question.



Case Tractor Pulling Spraying Machine

so that under a normal load it would not be called upon to develop more than three-fourths of its rated power. Some men act wisely when they give the so called 3-bottom rig a 2-bottom load.

Perhaps the farmer is somewhat to blame for this condition. He becomes unduly alarmed over the packing of the soil by the heavy machine. The manufacturer, therefore, gave him a light weight tractor

The crawler, or caterpillar, type of tractor must be seriously considered in the future. There are now several makes of this type on the market and one turns to them because they eliminate completely our objection to soil packing and their remarkable tractor power enables them to develop a full load under most adverse conditions.

The chief objection to the crawler has



Wallis Tractor, 4-Wheel Model, Pulling Case Tractor Plow

The average size of all farms using 2-bottom rigs was 153 acres; 3-bottom rigs 183 acres. There does not seem, therefore, to be any sharp line between size of farm for these two rigs. There has been a decided tendency for men to buy the 2-bottom rig without much regard for the size of the farm. This very frequently results in the purchase of too small a machine. Forty per cent of those purchasing a 2-bottom rig said that if they were buying again they would get a more powerful machine.

Tractor Ratings

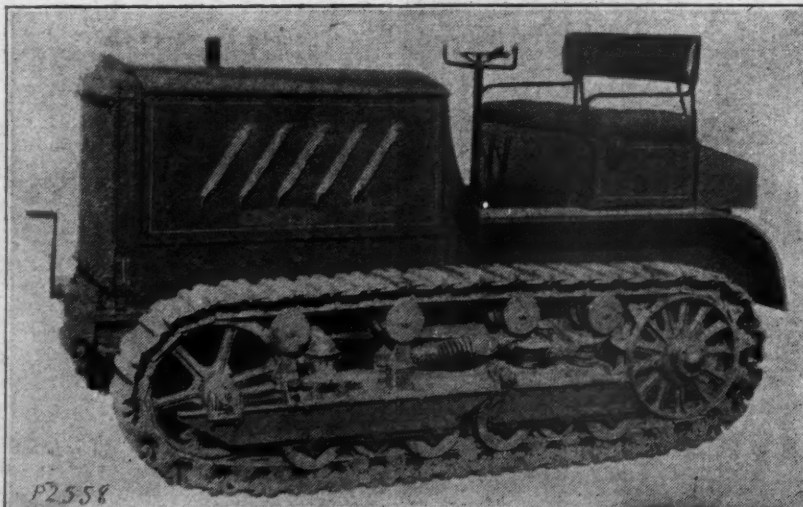
This brings us to the question of tractor ratings. Continued observation leads one to believe that many of the tractors on the market are overated both as to belt and draw-bar horsepower. In too many cases the 3-bottom is taxed to its capacity to pull its load under favorable conditions having but little reserve power to meet an emergency such as a slight grade or a stretch of hard soil.

This condition leads to two serious difficulties. One is unable to keep the plows to the desired depth at all times or to consistently maintain the load whatever it may be and, what is still worse, the tractor is forced to work at maximum power too much of the time. Automobiles as a rule are developing only about one-quarter of their full power when making an average run. How long would they last if they were forced to climb a hill continually where they were compelled to develop their full rated power? Unquestionably a tractor should have sufficient reserve power

which must be operated at a high speed to get the desired power. He then expected the small machine to do quite as much work as the heavier type. I think the packing of the soil has been over emphasized. With extension rims or with long angle iron lugs now so common a five thousand pound tractor gives little difficulty in this regard, in fact a heavier weight can be used on most soils.

been the short life of the truck. We believe, however, that this fault is being gradually overcome. Both materials and construction which are calculated to withstand the gruelling condition under which the work must be done are now being used and as a consequence upkeep in this particular will be very much decreased.

The survey further showed that the average number of acres plowed per day



Holt Caterpillar Tractor, 5-Ton, 4 to 6-Plow Model

was five and one-half for 2-bottom and seven and three-tenths for 3-bottom rigs. Fuel consumed per acre averaged about 2.5 gallons for gasoline and 3 gallons for kerosene. The majority of tractors now being sold burn kerosene and seem to be handling it in a very satisfactory way at a very considerable decrease in fuel when compared with gasoline.

It would seem, therefore, that if the experience of 750 tractor owners who have used their machines for at least one year can be relied upon the following conclusions may be reached:

Summary of Conclusions

1. The tractor wisely purchased and operated with reasonable care can be relied upon to do its work well and can make a paying investment.
2. It will decrease the labor cost of the operation.
3. It may be expected to replace some of the horses on the farm of 150 acres size. Some tractors which can be used in cultivating corn will undoubtedly replace a considerable number of horses even the small farm.
4. The size of the machine should be carefully considered and the purchase too small a tractor for the large farm should be avoided.
5. The success of the investment will depend in part on the number of days found for the tractor. Belt work of various kinds should be done whenever possible.



The Cletrac Pulling a 6-Foot Double Disc Harrow in an Orange Grove

Should not we consider the use of our community owned machines? Among these may be included small threshers, balers, corn huskers, grinders, cutters, etc. These will give the tractor work and will add to the return on investment.

BRAND NAME ON FRUIT

The electrical stamping device for trade-marking citrus fruits is apparently working out satisfactorily in connection with Porto Rico grapefruit which has been arriving in the New York market for the past few months stamped with "Tropic"—the brand name used by shippers marketing through the Porto Rico Citrus Exchange. In addition to identifying the brand unmistakably, this stamping device, by the use of colored inks, designates the various grades into which the "bright fruit" and "russet fruit" is divided.

The same device has been tested out by the California Fruit Growers' Exchange for use on "Sunkist" oranges and lemons but did not prove entirely satisfactory because of the difficulty attending the automatic feeding necessary in the case of California packing houses because of the large shipments. Porto Rico grapefruit, being large, are fed into the machine by hand. Further experiments are being made toward the perfection of a mechanical feed which, when developed to a degree that would not slow down the California rate of packing, would make this device available for California fruit.

Special Apple Crop Report for August, 1919

By Bureau of Crop Estimates, Washington, D. C.

THE SALIENT feature of the August report, as issued by the Bureau of Crop Estimates through its fruit specialists, is the very large crop indicated from the northwest states, which have shown some increase over the July 1 estimate. On the other hand conditions throughout the east have declined, particularly in western New York, New England, Ohio, and the Virginias. The Maine crop, however, holds up well above the average. The middle west has also shown a decline, with the exception of Arkansas and the Ozark section which have a good crop. The commercial production for the United States is now estimated at 23,075,000 barrels as compared with 24,740,000 barrels in 1918. The box apple crop promises to be 30,675,000 boxes as compared with 21,300,000 boxes in 1918, or an increase of 44% in the box apple crop. The barrel apple crop on the other hand promises to be 12,850,000 barrels as compared with 17,687,000 barrels in 1918, or 73% of last year's barrel apple crop.

Eastern States

The crop throughout the east this year, including the territory from Ohio, south to West Virginia and east, now promises 7,835,000 barrels as compared with 12,722,000 barrels last year, or 62% of last year's crop. The most marked decline has been in western New York where the crop now promises to be about a fourth of last year. New England on the other hand, has a fairly good crop, particularly in Maine; which has several times the crop of last year.

NEW YORK—The New York state crop now promises to be 26%, or 38% of last year. The commercial production for the state as a whole is estimated at 2,275,000 barrels, or 12,639 cars, as compared with 3,800,000 barrels or 33,000 cars last year. Of the 33,000 car crop last year about 25,000 cars moved from point of origin in full carloads, or on the Hudson River boats. The remaining 8,000 cars were absorbed by local and up-state markets, and moved in mixed or less than carload lots. The crop in western New York is estimated at 21% as compared with 75% last year, or 23% of last year's crop. Wayne county has 22% of a crop, or about 30% of last year. Monroe has 18% of a crop, or from 20% to 25% of last year. Orleans and Niagara have 20% of a crop, or about one-third of last year, while Ontario has from one-third to one-fourth of last year. Wyoming, Geneva, Yates, and less important counties of western New York all have less than 20% of a crop. The crop about Hilton and Morton in Monroe county is particularly light, although at Hilton there will be several cars of Twenty Ounce. Twenty Ounce show the best condition of any variety in western New York and are a good average crop. The same is true of Russett, while Spy and King will run close to 50%. Early varieties will also run full 50%. However, Baldwin will not run over 15% and Greening is likewise very light. Quality is poor and it seems likely that the commercial crop in western New York will pack out from 25 to 40% No. 1, and many sections even less. Scab is particularly bad. The size of fruit is good in orchards not badly infested with disease.

FRUIT

THE HUDSON VALLEY crop is indicated at 45% and shows no change from last month. Columbia, Dutchess, Green and Ulster counties, all show a condition of 45%. Germantown will have 20 to 25% more apples than last year, while the Stuyvesant Falls section will have less. The Ravenna section will probably not have over 60% of last year, but the section around Highland, Ulster Park and most other points in Ulster county will show a 15 to 25% increase over last year. Greene county will have about 20% more than last year, while most of the heavy producing centers of Dutchess county will have from 45 to 50% more than last year. The valley as a whole now promises 787,000 barrels as compared with 647,000 barrels last year, or an increase of 21%. Ben Davis is practically a normal crop throughout the Hudson valley. Baldwin and Greening are not over one-third of a crop. McIntosh, although comparatively unimportant, is reported as a fairly good crop in most counties.

THE CHAMPLAIN DISTRICT now promises to have a very good crop, or over 200,000 barrels, and about twice as much as

last year. The crop is very short about Plattsburg and Peru, the latter place probably not having over 50% of last year. However, Grand Isle will easily have twice the crop of last year and the same is true of the Vermont counties on Lake Champlain and Lake George. Conditions are very good and fruit is looking fine. Spys and McIntosh are practically a full crop. Grand Isle county now promises to ship a considerable number of cars of extra quality fruit.

NEW ENGLAND—The crop promises to be considerable better than last year, particularly in Maine, Vermont and New Hampshire. The crop in Massachusetts, however, has suffered a decline and probably will not reach that of last year. Maine will easily have from three to six times the barrelled crop of last year. Some sections will have from four to eight times the crop; particularly is this true about Auburn and Lewiston. York county, however, will be lighter. The state as a whole promises to ship about 400,000 barrels more than last year. The fruit is above average in size and average in quality. The crop in Massachusetts is very good in Franklin county about Shelburne Falls and centers of heavy commercial production, where the crop will run about 70% are fully as good as last year. McIntosh and Wealthy in most parts of the state are 50 to 75% of a crop and of good size and quality, while Baldwin and Greening will run from 25 to 50%

of a crop and thus far are in good condition on commercial orchards. However, in the more uncared for orchards there has been severe disease and insect infestation, so the crop for the state will run less than last year. New Hampshire promises to have 120% of last year, or 146,000 barrels.

VIRGINIA now promises to ship 1,508,000 barrels as compared with 1,766,000 barrels last year, or 85% of last year's crop. The decrease is principally in the Winchester and lower Shenandoah Valley sections of the state. There is also a decrease of 40% in the crop about Roanoke. The sections which have shown an increase are Nelson and adjoining counties, also Augusta county and the district about Staunton, which shows an increase of 25%.

SHENANDOAH-CUMBERLAND DISTRICT—Extending from Staunton, Va., to Harrisburg, Pa., and including the most important producing counties of Virginia, West Virginia, Maryland and Pennsylvania, now promises 46% of a crop as compared with 65% of a crop last year, or 2,024,000 barrels as compared with 2,600,000 barrels, a shortage of 576,000 barrels from the crop of 1918. The section about Winchester and Martinsburg indicates about 45% of a crop, or 70% of last year's crop in this highly intensive district. The quality of fruit about Martinsburg and Winchester and south to Harrisburg is very poor compared with that of former years. The York Imperial crop of the Shenandoah-Cumberland valley is so badly infected with cedar

rust that the growth has been severely checked and the crop will run very small. Cedar rust also has severely affected the fruit on Ben Davis trees. Winesap, Black Twig and Stayman are severely affected by scab, so that it now appears that the quality of the fruit in the heart of the Shenandoah-Cumberland district will be the lowest in several years. Grimes are very light, particularly in Berkeley county. The fruit in Augusta county is much better in size and quality than in the lower valley and the quantity will run probably 400 cars more than last year. The section about Fishersville in particular has a good crop. Washington county, Md., will not have over 40% of a crop. Early varieties were very good. Scab and unfavorable conditions have cut the winter crop. In Pennsylvania, Franklin and Adams counties promise about 50% of a crop, or 75% of last year. The quality is some better than in the district about Winchester, although much below average.

PIEDMONT DISTRICT OF VIRGINIA, including the Roanoke section, now promises a crop of 513,000 barrels as compared with 465,000 barrels last year, or an increased of 10% over the crop of 1918. The greater part of the increase in the Piedmont may be credited to Nelson county, which will have fully 100,000 barrels more than last year. 50,000 barrels more will be shipped from Afton than last year and 25,000 more will be shipped from Coveseville. Other shipping stations located in Albemarle county will not ship more than last year on account of the light crop of Winesap. Many of the Piedmont growers have sold their crop at \$6.00 to \$8.00 f. o. b. Pippins, on the whole through the Piedmont, are a very good crop. Rappahannock county has about 75% of last year's crop, while Loudoun county is very light. The district about Roanoke will not ship over 60% of last year. The Bent Mountain and Starkey sections are particularly light. Cloverdale and Dalesville have a good crop, particularly the orchards about Dalesville, which are very full. Considerable hail damage is reported for the entire Roanoke district. Southwest Virginia has almost a crop failure this year, and will have less than 25% of a crop.

PENNSYLVANIA now reports a condition of 35% as compared with 62% last year, or 60% of the 1918 crop. The best crop in Pennsylvania is found in the heavy producing counties of Adams and Franklin, which are included in the Shenandoah-Cumberland district. The other sections of Pennsylvania have a light crop, due to conditions favorable to the development of fungus and other diseases and the very light set of fruit. The crop for the state as a whole will run very low in quality. Commercial production this year is estimated at 664,000 barrels as compared with 1,116,000 barrels last year, and 1,898,000 in a full crop year.

OHIO apple crop at the present time does not promise to exceed 20% of a full crop, or 38% of last year. The crop in southern Ohio will be about one-third that of 1918 or 184,000 barrels as compared with 553,000 barrels last year. Lawrence county has about 33% of a crop, while Athens, Gallia, and Meigs have from 15 to 20%. The district about Marietta will have about 20% of a crop. Northern Ohio also shows a very low condition and the apple crop in that section will not run over 40% of last year.

NEW JERSEY now indicates a condition of 62% or 101% of last year. A large part of the New Jersey crop is made up of early varieties, most of which have already moved. There, however, is a very good crop of late apples in southern New Jersey, especially in Burlington, Camden, Cumberland and Gloucester counties. Quality is reported better than in most other eastern sections.

DELAWARE—The early apple crop in Delaware has practically all moved and the late crop is estimated at about 400,000 five-eighths bushel baskets, compared with 140,000 baskets of late varieties last year, or practically three times as much. Quality and size are indicated as being excellent.

NORTH CAROLINA AND GEORGIA—The commercial districts of North Carolina and Georgia have very light crops. The Waynesville district of North Carolina will not have over 10% of a crop, while the Mount Airy district has about 40% of a crop. In Georgia, the commercial dis-

Commercial Apple Crop Report for August, 1919

| State | Commercial Crop | | Condition | |
|---------------------------|-----------------|------------|-----------|------------|
| | Aug. 1919 | Final 1918 | Aug. 1919 | Final 1918 |
| Maine..... | 624,000 | 226,000 | 80 | 29 |
| New Hampshire..... | 146,000 | 122,000 | 53 | 45 |
| Vermont..... | 211,000 | 105,000 | 54 | 27 |
| Massachusetts..... | 285,000 | 300,000 | 57 | 60 |
| Rhode Island..... | 25,000 | 20,000 | 62 | 50 |
| Connecticut..... | 122,000 | 108,000 | 54 | 48 |
| New York..... | 2,275,000 | 5,950,000 | 26 | 68 |
| New Jersey..... | 520,000 | 514,000 | 62 | 65 |
| Pennsylvania..... | 664,000 | 1,116,000 | 35 | 62 |
| Delaware..... | 208,000 | 186,000 | 65 | 62 |
| Maryland..... | 220,000 | 315,000 | 40 | 60 |
| Virginia..... | 1,508,000 | 1,766,000 | 45 | 54 |
| West Virginia..... | 680,000 | 1,092,000 | 42 | 70 |
| North Carolina..... | 80,000 | 184,000 | 20 | 47 |
| Georgia..... | 57,000 | 117,000 | 30 | 65 |
| Ohio..... | 347,000 | 902,000 | 20 | 52 |
| Indiana..... | 187,000 | 266,000 | 19 | 27 |
| Illinois..... | 806,000 | 837,000 | 28 | 29 |
| Michigan..... | 828,000 | 1,495,000 | 36 | 62 |
| Wisconsin..... | 155,000 | 114,000 | 55 | 44 |
| Minnesota..... | 74,000 | 40,000 | 70 | 40 |
| Iowa..... | 232,000 | 101,000 | 40 | 18 |
| Missouri..... | 1,078,000 | 735,000 | 44 | 30 |
| South Dakota..... | 4,000 | 3,000 | 55 | 36 |
| Nebraska..... | 215,000 | 61,000 | 50 | 17 |
| Kansas..... | 504,000 | 333,000 | 45 | 33 |
| Kentucky..... | 101,000 | 108,000 | 28 | 30 |
| Tennessee..... | 139,000 | 210,000 | 32 | 48 |
| Alabama..... | 11,000 | 26,000 | 30 | 70 |
| Texas..... | 34,000 | 11,000 | 80 | 25 |
| Oklahoma..... | 49,000 | 17,000 | 70 | 24 |
| Arkansas..... | 459,000 | 241,000 | 82 | 43 |
| Montana..... | 109,000 | 75,000 | 72 | 51 |
| Colorado..... | 841,000 | 527,000 | 65 | 43 |
| New Mexico..... | 206,000 | 117,000 | 60 | 35 |
| Arizona..... | 18,000 | 15,000 | 85 | 70 |
| Utah..... | 136,000 | 163,000 | 57 | 70 |
| Idaho..... | 1,013,000 | 112,000 | 76 | 12 |
| Washington..... | 5,382,000 | 4,296,000 | 78 | 76 |
| Oregon..... | 1,267,000 | 671,000 | 85 | 35 |
| California..... | 1,253,000 | 1,127,000 | 87 | 79 |
| Total, United States..... | 23,075,000 | 24,740,000 | 48 | 54.8 |

SPECIAL REGIONAL REPORT

| | Condition | | Commercial Crop | | % of last year |
|---------------------------------|-----------|------------|-----------------|------------|----------------|
| | Aug. 1919 | Final 1918 | Aug. 1919 | Final 1918 | |
| Western New York..... | 21 | 75 | 1,344,000 | 4,800,000 | 28 |
| Hudson Valley..... | 45 | 37 | 788,000 | 647,000 | 121 |
| Southern Ohio..... | 23 | 72 | 184,000 | 558,000 | 33 |
| Shenandoah-Cumberland Dist..... | 46 | 65 | 2,024,000 | 2,600,000 | 78 |
| Piedmont District..... | 54 | 48 | 513,000 | 645,000 | 110 |
| New England Baldwin Belt..... | 65 | 43 | 1,111,000 | 465,000 | 172 |
| Western Michigan..... | 42 | 59 | 541,000 | 760,000 | 71 |
| Western Illinois..... | 35 | 48 | 350,000 | 480,000 | 73 |
| Southern Illinois..... | 25 | 20 | 375,000 | 300,000 | 125 |
| Ozark Region..... | 58 | 34 | 731,000 | 429,000 | 170 |
| Missouri River Region..... | 42 | 30 | 924,000 | 630,000 | 147 |
| Arkansas River Region..... | 43 | 42 | 129,000 | 123,000 | 105 |
| Pacific Northwest..... | 79 | 65 | *7,771,000 | *5,037,000 | 154 |
| Colorado..... | 65 | 43 | *841,000 | *527,000 | 160 |
| California..... | 87 | 79 | *1,253,000 | *1,127,000 | 111 |

*To reduce to boxes multiply by 3.

tract located about Cornella and Demorest, will not exceed 30% of a crop. Ben Davis and Yares are in much better condition than other varieties.

Central States

INDIANA—Condition of Indiana apple crop shows a decline from last month. Dry, hot weather during the month caused damage in some sections. Winesaps have best prospects of any variety in southern half of state. Ben Davis is very light. Early varieties were generally good.

ILLINOIS—The Illinois crop will be slightly less than last year, being estimated at 28% of a full crop as compared with 29% in 1918. Scab is bad in many sections. Ben Davis and Gano are generally light crop. Winesap fair to good. Willow Twigs fair. Jonathan good crop in western counties.

WESTERN ILLINOIS—This region comprising the counties of Pike, Adams, Calhoun, Green, Jersey, Scott, Morgan, Cass, Brown, Schuyler, McDonough, Hancock, and Henderson, has a lighter crop than last year. The crop this year is estimated at 36%, or a yield of 360,000 barrels, as compared with 45% of a full crop and an estimated yield of 450,000 barrels last year.

Calhoun county has the best crop of any county in this group, being estimated at approximately the same as last year, or 42% of crop. Jonathans are a good crop throughout this region, being probably 60% of full crop. Ben Davis and Gano will not exceed 10% of crop, Grimes better than 40% of a crop, Willow Twigs 20% of a crop, Black Twig and Winesap 15% of a crop. Quality only fair, as lots of scab is found. Duchess and Wealthy were generally a good crop.

SOUTHERN ILLINOIS—The southern Illinois region comprises all that portion of the state south of and including the tier of counties commencing at Madison on the western side and extending to Crawford county on eastern side of state.

This region normally produces about 55% of the total production of the state. The early apple section of this territory comprising Union and Johnson and adjoining counties, will have about the same winter apple crop as last year. The early crop in these counties this year was probably 15% better than the 1918 crop. Quality was better than last year. The total production in these counties this year will approximate 185,000 barrels, as compared with 171,000 barrels last year. Important centers of production in these early apple counties are Cobden, Alto Pass, Anna, New Burnside and Tunnel Hill. Marion, Clay and Richland counties, the most important commercial counties in the region, will have not to exceed 18% of a crop this year as compared with 22% in 1918. Quality of fruit only fair. Considerable scab and blotch in the entire region. The total commercial production in southern Illinois this year will approximate 25% of a full crop as compared with 20% last year.

KENTUCKY—Henderson county, the most important commercial apple county in the state, is estimated at 33,000 barrels this year compared with a light crop of 7,200 barrels in 1918. Winesap is the leading variety grown in this section. Quality fair as blotch is developing on Ben Davis and Gano.

MICHIGAN—The apple crop in Michigan this year will not exceed 35% of a full crop as compared to 62% of a full crop in 1918. Baldwins and Spys are generally light throughout the state. Greenings, Russets, and Wageners have the best prospects for a crop of all winter varieties. The winter crop for the state will not exceed one-third of last year's crop. Early apple crop about the same.

WESTERN MICHIGAN—This region, comprising the counties of Van Buren, Berrien, Allegan, Kent, Newaygo, Oceana, Mason, Ottawa, Muskegon, Manistee, Benzie, Grange Traverse, Leelanau, Antrim, Charlevoix, Emmet and Cheboygan, produces nearly two-thirds of the total commercial apple crop for Michigan. The crop in Van Buren county is estimated at 29% of a full crop, Berrien at 25%, Allegan at 33%, Kent at 44%, or a total production from these counties of 246,000 barrels this year as compared with 485,000 barrels last year. Centers of production in these counties being Fennville, South Haven, Benton Harbor, Hartford, Watervliet and Grand Rapids. Oceana, Mason, Manistee and Benzie have highest percentage of a crop of any counties in the state this year. Probably 65% of a full crop or 178,000 barrels will be produced in these counties this year as compared with 116,000 barrels or

45% of a crop last year. The production in these counties centers around Shelby, Hart, Ludington, Manistee, Bear Lake, Arcadia and Elberta. The Duchess and Wealthy crop in Western Michigan is estimated at 75% of a full crop or approximately 195,000 barrels as compared with 82% of a full crop in 1918 and a yield of 213,000 barrels. Baldwins and Spys are very light, being a failure in many orchards. Wagoner, Steeles Red and Greening are fair to good crop. Jonathan is generally good where grown. Quality and size of the apples is good, although extreme dry weather has done some injury. The total commercial production in western Michigan is estimated this year at 541,000 barrels as compared with 760,000 in 1918.

MINNESOTA—A heavy drop on account of excessive heat and drought in some parts of the state has reduced prospects materially and the commercial yield is now estimated at 70% of a full crop as compared with 40% of last year.

WISCONSIN—An excessive drop has lowered apple prospects in Wisconsin. Extremely dry, windy weather have caused an excessive drop in many sections of the state. Scab is also quite prevalent. Door county is estimated at 85% of a crop as compared with less than 40% in 1918. The commercial orchards in this county are young and well cared for. Duchess and Wealthy, good winter varieties, fair. Suak county is estimated at 42% of a crop, Richland at 50% and Crawford at 45% of a full crop. The crop for the state is estimated at 155,000 barrels as compared with 114,000 barrels in 1918.

IOWA—Southwestern Iowa has best prospects of any part of the state for winter varieties. Southeastern counties very light. Early varieties were best in most counties of the state. Considerable fungus infection and some hail damage.

KANSAS—The Kansas commercial apple crop will not exceed 45% of a full crop as compared with 33% last year. Dry summers and hard winters have reduced the vitality of many Kansas orchards. A large percentage of the Kansas commercial crop is sold direct to the consumer from the orchard via "wagon or truck" route.

ARKANSAS VALLEY—The crop in the Arkansas valley, Kansas, this year will be practically the same as last year, or 129,000 barrels. Winesap and Black Twig are badly infected with scab, although they set a good crop. Early varieties were generally a good crop. Ben Davis and Gano light crop. Grimes Golden and Jonathan good crop. Probably two-thirds of the commercial crop for this valley is hauled direct to market by truck or wagon. Balance moving in carload lots.

NEBRASKA—Commercial production of apples in Nebraska is largely found in Missouri River counties, although commercial orchards are found elsewhere in the state. The crop this year is more than three times that of last year, or a probable yield of 215,000 barrels. Considerable scab in orchards in Missouri River counties.

MISSOURI—The Missouri apple crop shows a decrease during the past month. This was largely found in central and northern counties, the Ozark region remaining nearly the same. Pike, Ralls and Marion counties in northeastern Missouri, will probably have 28% of a crop this year as compared with 30% of a crop in 1918. The estimated production for the state this year is 343,000 barrels greater than the crop of last year.

MISSOURI RIVER REGION—This region, comprising those counties bordering on the Missouri River in Missouri, Kansas, Nebraska and Iowa, starting from Cooper and Boone counties in Missouri and ranging northward to Harrison county, Iowa and Burt county, Nebraska, is estimated at 42% of a crop this year as compared with 30% in 1918. Doniphan county is the leading producing county in Kansas and produces 15% of the Missouri River regional production. This county will not have to exceed 37% of a crop this year, or approximately 131,000 barrels as compared with 45% of a crop, or 148,000 barrels in 1918. Among the important Missouri counties in this region, Lafayette and Jackson, which normally produce 19% of the crop of this section, will not have to exceed 45% of a full crop, or approximately 188,000 barrels this year as compared with 38% of a crop in 1918 and an estimated yield of 134,000 barrels. Buchanan, Andrew and Holt counties, which normally produce 17% of the region's production, will have approximately 40% of a full crop, or 147,000 barrels, or 125% of the

1918 crop. Carroll, Boone and Chariton counties at the southern end of the region promise 37% of a crop.

Richardson and Nemaha counties, Nebraska, show a decline for the past month and are now estimated at 56% of a full crop, or 100,000 barrels or more than twice the crop of last year. Fremont, Mills, Pottawattamie and Harrison, comprising the Iowa counties in this region, are expected to produce 125,000 barrels this year as compared with 32,000 barrels last year. Taking the region as a whole, the total carlot movement this year will approximate 3,400 cars as compared with an estimated movement in 1918 of 2,400 cars. Dry weather has reduced prospects in some parts of this region. Jonathans promise the best yield of any variety grown, or better than 75% of a crop. The Ben Davis and Gano yield is very spotted, ranging from 20% in some counties to 65% in other counties, or an average of 35% of a full crop for the entire region. Winesaps promise 60%, Yorks 50% and Black Twigs 50% of a full crop. Early varieties generally good. Considerable fungus in orchards throughout the region.

THE OZARK REGION of southwest Missouri and northwest Arkansas promises 58% of a crop as compared with 34% last year. Benton and Washington counties, Arkansas, which normally produce 40% of the Ozark region production, are estimated at 80% of a full crop as compared with 37% in 1918. In these counties Jonathans are estimated at 90%, Ben Davis and Gano at 70%, Black Twig and Winesap at 50% of a full crop. Early varieties such as Maiden Blush, Transparent and Duchess were a good crop. Weather conditions have been good for producing good quality and normal size fruit. Growers have reported making sales of Jonathans at \$6.50 to \$6.75 per barrel, with sales of other varieties in proportion. Greene and Lawrence counties, Missouri, which produce 24% of the total Ozark production, will have 60% of a full crop as compared with 38% last year. Present prospects in these counties indicate that Ben Davis and Gano will produce 62% of a crop, York Imperial 90%, Ingram 12%, Paynes Late Keeper 60%, Jonathan 75%. Quality in most commercial orchards good to excellent. Newton, McDonald and Barry counties promise 60% of a full crop. Webster, Wright and Howell are estimated at 33% of a full crop. The total carlot movement out of the Ozark region this year will exceed 3,200 cars as compared with a total movement in 1918 of less than one-half this number. A part of the commercial crop in Arkansas is sold to wagon buyers.

Western States

WASHINGTON—Conditions in Washington have generally improved during the month, particularly in the Yakima valley and the Spokane district. This year Washington will be the leading apple producing state by a large margin and promises to ship approximately 21,300 cars as compared with about 17,000 cars in 1918. The Wenatchee north central Washington district now promises to ship about 9,600 cars. Conditions are excellent; fruit is very large and of superior quality. Of the 9,600 cars promised from the District there will be approximately 2,800 cars of Winesaps, 1,800 cars Jonathans, 1,300 cars Delicious, 900 cars Spitz, 800 cars Rome Beauties, 200 cars Winter Banana and smaller lots of a number of varieties. The Yakima valley district now promises 9,500 cars, an increase of 1,500 cars over last month's estimate and 2,000 cars more than last year. The increase is due to excellent growing conditions and the large size of the fruit, which is the largest in the history of the valley for this time of year. Jonathans will make up the heaviest production and are 85% of a crop, followed by Winesaps which are lighter, or 55% of a crop. Rome Beauty is about 95% of a crop while Spitz and Newtowns are fully 85%. The Spokane district, due to recent heavy rains, is now estimated at 700 cars as compared with about 1,000 cars last year. A large part of this production will be Wagoner and Jonathan. Walla Walla, which last year shipped only about 130 cars, now promises fully 1,000 cars, of which about 450 cars will be Rome Beauty, 250 cars Jonathan, 200 cars Winesap and 50 cars Yellow Newtowns; the remainder will be mixed. The White Salmon and Underwood section now promises to ship about 260 cars. The apples from the state this year promise to be of exceptional quality and size and will be loaded about 756 boxes to a car.

OREGON now promises to ship about 5,028 cars as compared with 2,668 cars in 1918. Conditions in the Hood River valley are excellent. The apples are of good size and quality and the estimated output for the valley is now 1,800,000 boxes as compared with about 1,350,000 in 1918. The bulk of this production is made up of Spitz and Newtowns. The Rogue River valley or Medford district is estimated at about 700 cars, while the remaining counties in western Oregon will ship about 500 cars. The Mosier and Dufur sections in Wasco county are estimated at about 360 cars, while the Milton Freewater district promises about 500 cars, or twice as many as last year.

CALIFORNIA—The Watsonville district, located in Santa Cruz and Monterey counties, now promises to pack about 3,000,000 boxes as compared with 2,500,000 boxes in 1918. Present conditions are very favorable. Belleflowers will show fully a 25% increase over last year, while Newtowns will run slightly better than last year. Growers report prices for fancy Newtowns at \$1.85 to \$2.00 per box. The Sonoma county apple crop is estimated at between 600 and 700 cars, of which nearly 400 are Gravensteins. The Yucaipa section in southern California is fast increasing in importance and has a very good crop of splendid quality this year. The Watsonville dried apple output is now estimated at 4,500 tons, while the Sebastopol section is estimated at 3,500 tons.

IDAHO—The state now promises to ship fully 4,000 cars or 500 cars more than the 1917 crop. The Payette-Weiser district is estimated at 2,500 cars, 700 of which will be shipped from Fruitland. The Boise valley will ship 500 cars, Twin Falls 500 cars, and the Lewiston district 400 cars. The crop this year will be eight to nine times that of 1918 and thus far is of excellent size and quality.

COLORADO now promises about 2,523,000 boxes as compared with 1,581,000 boxes in 1918, or an increase of 60%. The Grand valley will probably ship about 1,800 cars while Delta county promises about 900. Jonathan, Winesap and Rome Beauty are about 50% of a crop and will make up about 400 cars, while Ben Davis and Gano are a full crop and will make up a like number of cars. Fremont county of the Canyon City district promises about 600 cars. Fruit in the latter district has been severely injured by leaf roller. Montrose county is almost a complete failure due to the heavy late spring frosts. Apples in Mesa and Delta counties are of good size and quality. Weather is favorable for fine color and maturity. The crop thus far is generally free from worms.

UTAH indicates a fairly light crop, or about 83% of last year. Utah county will have about 250 cars, Davis county 150 cars, while Weber, Box Elder and Cache counties will each ship less than fifty cars. Jonathan, one of the leading varieties, is generally reported very light.

NEW MEXICO—The Pecos valley in New Mexico is now estimated at about 500 cars. Ben Davis will make up the heaviest shipments. In addition there promises to be 50 cars of Jonathans, 20 of King David, 20 of York, 10 of Winter Banana, and several cars of Winesap, Arkansas Black and Gano. The quality is good particularly in regard to size and color although there is considerable hail damage. San Juan district in northwestern New Mexico promises about 100 cars.

MONTANA is now estimated at 450 cars, most of which will originate in the Bitter Root valley. The leading variety is McIntosh.

Canada

Reports from Nova Scotia indicate a crop of probably 300,000 barrels more than last year. Baldwin, King and Ben Davis are a good crop. Gravenstein and Stark are somewhat lighter, while Greening and Ribston are light. Quality is good on well cared for orchards, and size above average.

ONTARIO in general has a light crop. The section about Lake Ontario and St. Lawrence valley has shown a decline. The Georgian Bay district promises an increase of probably 25% over last year.

BRITISH COLUMBIA—The output strictly commercial fruit will probably exceed the 1918 crop by about 30%, particularly in the Okanagan valley, where size and quality is reported excellent.

Fruit Crop Specialists,
S. M. Thomson, J. R. Duncan,
Leon M. Estabrook, Chief of Bureau.

The Work of Tractors in Orchards

By Chas. L. Opperman, Maryland State College

WHILE the development of the farm tractor has been little short of marvelous during the past five years, only a small percentage of the farm and fruit growers of the county whose operations, when compared with the operations of those who have been blazing the "trail of the tractor," as it were, would justify the substitution of the "iron mule" for horse power have as yet given it serious consideration or a practical try out.

Strictly speaking this conservative, watchful waiting policy on the part of the tillers of the soil is not the result of an antagonistic attitude toward modern developments in American agriculture, but is due primarily to the fast increasing tendency of the farmers to carefully study their problems from every standpoint before making a jump. It is an honest effort to determine if possible whether or not modern power farming practices are adaptable to their particular conditions. The average fruit grower is no exception to this rule and it may be said in his favor that he has several special problems which must be studied carefully in a consideration of the practicability of the tractor in the orchard. Many of these problems, however, are fast disappearing as a result of the splendid showing being made by tractors now in the hands of fruit growers in all sections of the country.

It is only a comparatively short time ago that many orchardists were in doubt as to the possibility of turning at the end of the row without injury to the trees. Today some of the leading tractors can make a complete turn in a circle having a diameter of less than twelve feet. The height of the early types of machine was another serious objection in low headed orchards because of the number of low hanging limbs broken during cultural operations. This difficulty has been eliminated by the development of low machines especially adapted to the work. Again many still believe that the tractor is impractical in steep hilly orchards because of its inability to get traction, yet certain types are being used successfully in many of these sections. Thus on every hand we see abundant evidence of the success of the manufactures in overcoming the difficulties which have loomed large in the eyes of the fruit growers in connection with the use of the tractor for orchard operations.

Time and Labor Saving

One cannot observe the work of the tractor in the orchard for any length of time without reaching the conclusion that the big advantage of gas over horse-power in the case and despatch with which a big job of work can be accomplished. Almost without exception we find that the tractor operated orchards are in a better state of cultivation at any given season than are those where cultural operations are dependent upon horse power. This condition has been especially noticeable during

the past two years because of the difficulty of procuring sufficient farm labor to perform the necessary operations with teams.

We are but to take cognizance of the many advantages which the tractor holds in the motive power field to appreciate why it is showing up to such good advantage in the orchard. Approaching the situation from the standpoint of economy we find that the overhead cost of maintenance in the case of the tractor versus the horse favors the former to a very noticeable extent. Aside from overhead charge of interest, depreciation and storage the tractor does not represent any expense when not in operation, while the cost of upkeep for the horse is nearly as high when

overhead cost, which condition must logically favor the adoption of the tractor.

However, this is but a minor point since practice has proven that the big advantage of the tractor is the speed at which the various orchard operations can be accomplished. The rapid development of special plows, cultivators, discs, spraying outfit, seeding implements, etc., in connection with the tractor has made it possible to do a given job of work better and in a much shorter time than is possible with horses. At least a third of the man power required for teams is also saved which in itself is a vastly important consideration today. By the use of the tractor there is less injury to the trees since the modern extension

short time. For such belt work as running the cider press, sawing wood, cutting fodder, etc., the tractor is hard to beat for efficient results.

Since a great many orchardists who are contemplating the purchase of a tractor are very much interested in the comparative cost figures of tractors versus horse power it will be well to give some discussion to the subject. As I see it the great draw back to such figures is the difficulty of applying them to general conditions. As a rule they simply represent the accomplishment of one man under certain given conditions so that their value is largely relative. Mr. Sidney H. Karr, former manager of the Maryland Orchard company of Hancock, Maryland, has made a careful study of these comparative costs and the following table is a recapitulation of the various records secured.

Cost of Work

| | |
|--------------------------------|--------|
| Hours plowed with tractor..... | 132 |
| Acres plowed with tractor..... | 102 |
| Cost per hour..... | \$1.50 |
| Cost per acre..... | 2.04 |
| Cost team plow hour..... | .51 |
| Cost team plow acre..... | 3.40 |
| Difference in acre cost..... | 1.36 |

| | |
|--------------------------------|------|
| Hours disced with tractor..... | 65 |
| Acres disced with tractor..... | 73 |
| Cost per hour..... | 1.07 |
| Cost per acre..... | .95 |
| Cost team disc hour..... | .95 |
| Cost team disc acre..... | 1.19 |
| Difference in acre cost..... | .24 |

| | |
|----------------------------------|------|
| Hours harrowed with tractor..... | 65 |
| Acres harrowed with tractor..... | 73 |
| Cost per hour..... | 1.07 |
| Cost per acre..... | .95 |
| Cost team harrow hour..... | .95 |
| Cost team harrow acre..... | 1.19 |
| Difference in acre cost..... | .24 |

The per-hour costs shown in the table given were made up as follows:

| | |
|--------------------------------|------------|
| TRACTOR PLOWING— | |
| Cost of tractor..... | \$1,300.00 |
| Interest at 6 per cent..... | \$ 78.00 |
| Depreciation, 20 per cent..... | 260.00 |
| Repairs, 5 per cent..... | 65.00 |
| | \$403.00 |
| Used 700 hours per year 700 | \$.45 |

| | |
|--------------------------------------|--------|
| Wages of operator..... | .25 |
| Fuel and oil..... | .25 |
| Total cost tractor per hour..... | .95 |
| Total cost plow per hour..... | .55 |
| Total cost tractor plowing hour..... | \$1.50 |

| | |
|--------------------------------|----------|
| COST OF TRACTOR PLOW— | |
| Cost of plow..... | \$220.00 |
| Interest, at 6 per cent..... | \$13.20 |
| Depreciation, 10 per cent..... | 22.00 |
| Used 150 hours per year..... | \$35.20 |
| Plow points..... | .15 |
| Repairs..... | .16 |
| Total cost plow per hour..... | .55 |



International Tractor Preparing Orchard for Cover Crop

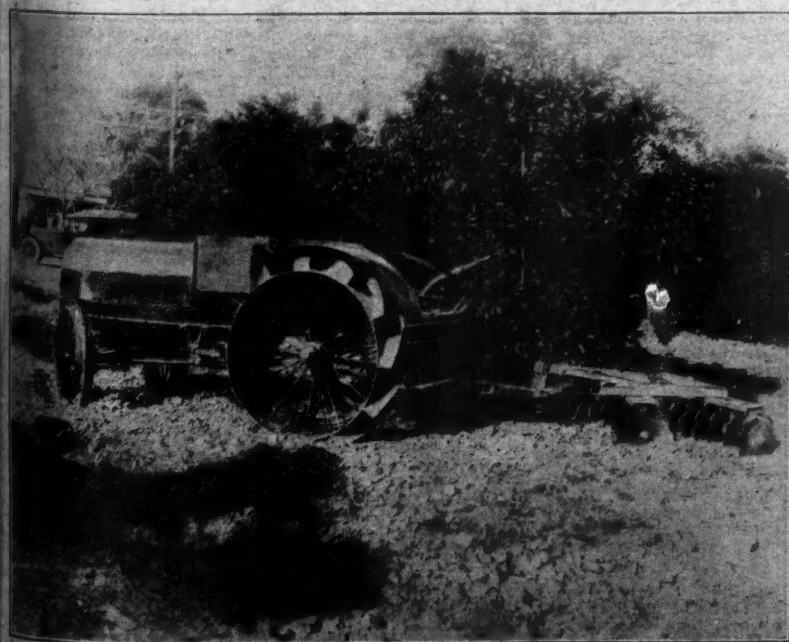
idle as while at work. The importance of this point is better understood when we realize that on most fruit farms the seasonable working period is even shorter than that of the average, general farm.

Previous to the advent of the motor truck the horse came in very good for hauling the fruit to the packing houses and later in transferring it again to the shipping point, in addition to the plowing, cultivating, spraying and other orchard operations, which made it possible to use him to advantage over a larger period of time that is now practical since the motor truck has clearly proven its advantage over the horse for the transportation of fruit. Therefore the elimination of the horse from the field means a shorter seasonable working period and a corresponding higher

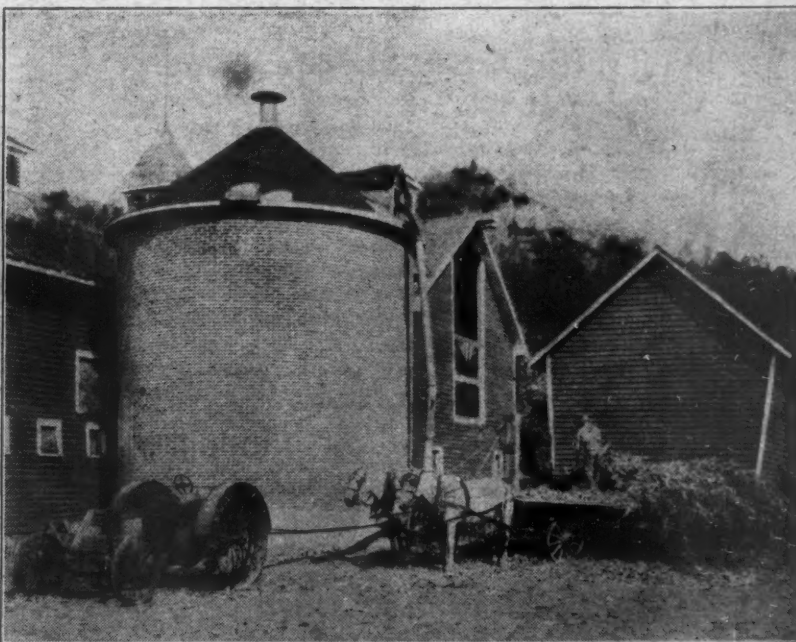
cultivating implements make it possible to work the ground close to the trees with the tractor operating in the center of the row. Again the greater width of the implements used with the tractor lessens the number of trips necessary to work the ground. Perhaps more important than all of these is the ability of the tractor to forge steadily ahead at 2½ or 3 miles an hour twenty four hours a day if necessary regardless of the aeroplaning tendency of the thermometer.

Used for Many Purposes

The use of the tractor is not limited solely to the various cultural operations in the orchard. If a block of peach trees are to be pulled up a good logging chain fastened high on the trunk and then coupled to the tractor will do the trick in a very



Sandusky Tractor Disking in Orchard



La Crosse Tractor Filling Silo, After Finishing Orchard Work



Traffic Truck

\$1395

Chassis f. o. b. St. Louis

Traffics Fit the Farm

There are more motor trucks in use on farms than in any other branch of American industry. Day by day, more and more Traffics are being employed because they return a greater profit to the farmer than he derives from any other single machine he uses in the conduct on his farm.

Due to fast Traffic Truck delivery and less handling, fruits and produce bring bigger prices in market by reason of their freshness and better condition—live stock does not lose weight through shrinkage during transit. A Traffic Truck makes three trips while a team is making only one—and at half the cost—it will haul a 4,000 lb. load 42 miles for 90 cents' worth of gasoline. You will profit with a Traffic because it fits the farm. Its capacity best fits the farmer's needs—its price fits his purse. No amount of money or engineering skill can build a stronger or better truck of its size—it is *the lowest priced 4,000 lb. capacity truck in the world.*

Traffic Truck Specifications:

Red Seal Continental $3\frac{3}{4} \times 5$ motor; **Covert** transmission and multiple disc clutch; **Bosch** magneto; 4-piece cast shell, cellular type radiator; drop forged front axle with **Timken** roller bearings; **Russel** rear axle, internal gear, roller bearings; semi-elliptic front and rear springs; 6-inch **U-channel** frame; **Standard Fisk** tires, $34 \times 3\frac{1}{2}$ front, 34×5 rear; 133-inch wheelbase; 122-inch length of frame behind driver's seat; oil cup lubricating system; chassis painted, striped and varnished; driver's lazy-back seat and cushion regular equipment. Pneumatic cord tire equipment at extra cost.

Chassis \$1395
f. o. b. St. Louis

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Traffic Motor Truck Corporation

St. Louis, U. S. A.

Largest exclusive builders of 4,000 lb. capacity trucks in the world

Interest, depreciation and repairs of disc, divided by hours used per year:

Gives hour cost of \$.12
Hour cost of tractor95

Hour cost of discing \$1.07

The charge for the use of our double harrow figures out to be the same as that for the disc.

COST OF TEAM PLOWING—
Feed per hour \$.15
Interest, depreciation, etc.03
Wages, teamster25
Shoeing015

COST OF HORSE PLOW—
Interest, depreciation, etc. \$.01
Points015
Repairs01

Total hour cost \$.51

COST OF TEAM DISCING—

In discing with teams we would have to use two teams with two or three horses each. Each team would pull half of the engine disc or its equivalent. The cost would be figured as follows:

Feed, interest, depreciation, shoeing, \$.195
Multiply by three 3

Wages of driver \$.585
Cost for use of disc12
Total hour cost of team discing955
Divided by 8 acres discing in hour 8
Total cost team discing, acre 1.19

The lack of mechanical knowledge of the part of the layman which is so essential to the successful operation of the tractor and the inability of tractor owners to get reasonably quick service for repairs and replacing parts, are the two big outstanding factors which militate against their more general successful adaption to farm and orchard work. Most of the dissatisfaction and many of the so-called failures in power farming can be traced to those two sources.

Just how to overcome the trouble has been an ever present problem with the manufacturers and farm machinery experts of our state agricultural colleges. During the past two years these two branches have been attempting to meet the situation through the distribution of literature, the holding of public tractor schools and field demonstrations. Much good has been accomplished in this way but the extent of the field to be covered is such that only a small part of it can be reached each year with the facilities available for the work.

As the industry develops we may logically look for the establishment of factory service stations at frequent intervals over the country where the services of experts will be available to the farmers where repair parts can be procured on reasonably short notice. To be specific there would seem to be no logical reason why this phase of the tractor industry should not be handled very much like the service



Monarch Tractor Breaking Up Land for an Orchard

COST OF TEAM HARROWING—

In figuring this cost it was taken for granted that we could hook four-head of mules to the same double harrow that the tractor was hooked to, and could do the work in the same way. If the harrow was to be broken up into its two halves or if one half of the implement was used to go through the tree row twice, the cost would be somewhat higher and the cultivation not so deep, thus:

Interest, depreciation, shoeing, feed, \$.38
Cost of harrow12
Wages of driver25

Total cost per hour for team harrowing \$.75

"The table shows in each case a saving by the use of the tractor," said Mr. Karr in explaining the figures. "This result is in itself satisfactory, but more than this there are factors which enter as benefits of tractor work which are tangible but not easily figured in exact amounts. For instance, the total man-power used in accomplishing the work with the tractor, as shown on report blanks, was 565 hours, while to do the same work with teams the total man-power required would have been 1,592 hours, or a saving by the tractor method of 1,027 hours over a total of 90 days, which means a saving of the labor of two men.

"In the second place, to accomplish the work done by the tractor with the use of teams, after a careful study of the table, a good estimate would call for 2,060 team hours, or 206 team days, or the use of three two-horse teams during the 90 days."

departments of the large automobile manufacturers.

As is the case in practically all lines of industry there is a tendency on the part of some tractor companies to build machines to sell without regard to their ability to stand up and give reasonable service under ordinary farm conditions. Such machines are usually low-priced and backed by a sort of absurd claims to catch the eye of the prospective purchasers. Thousands of such machines have been sold, thousands more will be sold, and the resulting failures which are inevitable will be one of the blotches on the pages of the history of the industry. However, there is a bright side to this particular cloud for manufacturers are fast coming to realize unless "Service That Satisfies" is an integral part of their general organization policy, they cannot hope to live and wage successful competition in this or any other field of industry.

\$3,000 PER ACRE FOR ORCHARD

A five-acre orchard in the Wenatchee Valley was recently purchased by J. H. Dengel of Chicago, for \$15,000. The trees were in full bearing, and the improvements on the place had some influence upon the price. This is probably the highest price per acre ever paid for an apple orchard.

RECORD PRICE PER ACRE

Fifteen thousand dollars or a little over \$2,300 per acre, is the record price recently paid for the six and one-half acre apple orchard of H. W. Patrick of the Wenatchee, Wash., district.

With Our Editor

Fake Fruit Drinks

NEW way of cheating the fruit grower has lately been brought forcibly to our attention. The sale of fruit juice drinks, which we foresaw as an accompaniment to prohibition, has started, and on the surface goes well, for the fruit grower, reading pretty signs, thinks that the public is being educated to consume fruit juice drinks.

During the past few weeks, we yielded to the attraction of a so-called sparkling apple juice, only to find that the unassisted palate could not detect the least taste of apple in the concoction. Probably a chemical analysis would not have been more successful. With ardor somewhat dampened by this tasteless experience, we next ventured into the citrus field by ordering an orange juice drink. No stretch of the imagination could connect that drink with a drop of real orange juice.

It is not hard to see that this dishonest practice, if kept up, far from educating the public to the use of fruit juices will quickly educate them away from such unappetizing stuff. It will take a hugely expensive campaign to overcome the bad impression made by the drink fakirs. Not only will their own business be deservedly ruined, but so will that of the honest man who tries to put enough, delicious, healthful fruit juices on the market.

We heartily urge every grower (for there is not one whose business may not be affected by the demand for fruit juices) to take up this matter immediately by writing to the pure food and health authorities both local and state, and insisting that some drastic measure be taken to check this threat to our prosperity.

Growers and Packers Organize

OREGON fruit growers have organized a state-wide association which is affiliated with a packing corporation on a non-profit and co-operative basis. By the terms of the contract, the Oregon Growers' Co-operative Association shall deliver its products to the Oregon Growers' Packing Corporation, which shall handle them on the basis agreed upon, namely, that the packers shall pay the growers for their products and pack and handle same in the interest of the growers paying them the resale price minus actual cost of handling and a charge of 2% for advertising, etc.

The organization will promote the production of all varieties of fruits and nuts. Any commercial grower in Oregon is eligible for membership, and an active campaign for membership was carried on through July in the fruit growing centers of the state. Capital stock is fixed at \$1,000,000, and the 2 per cent charge is expected not only to finance advertising campaigns, but to pay dividends, create a reserve and retire the preferred stock.

All fruit growing states will watch with interest the results of state-wide co-operation in Oregon, and there is no doubt that co-operation will win many staunch advocates in other communities, if the profits to growers are at all commensurate with the anticipations of the organizers.

Farm Bureaus Most Desirable

ONE GREAT lack of agriculture today in all its branches, is the lack of proper organization. Almost every other trade or industry is organized and yet this most important of all industries remains to a large extent without organization and without the benefits of true co-operation. Strength is not to be desired in an injurious activity, and we must deplore the power that organization has conferred upon some who use it to the detriment of the public, but the very extent of the injury which they are capable of inflicting but makes more evident the inherent strength that lies in organization.

Fruit farmers and farmers are by slow degrees forming societies of one kind and another. A few states are far more advanced than the rest in this respect, and their lead should be followed. One of the ablest instruments for co-operation and organization is the county farm bureau. When every agricultural county in the United States has its farm bureau we shall have a good start toward the ideal condition for the farmer. The membership of such a bureau is naturally made up of the most representative men of the county, and they choose an able man as county agent. This is the first step toward county organization, which naturally develops into state and then into federal organization.

The general farmer and fruit farmer are naturally most nearly allied in interests, and a coalition may be looked for first between these two great branches of agriculture, but in time others would perceive the advantage of coming in under a general co-operative system. Every sort of enterprise would be greatly facilitated and the interests of all concerned could be advanced far more rapidly than is at present possible.

What a power in the land all those who till the soil or who engage in the kindred pursuits of dairying, stock raising, etc., would become under such a system. And as the best thing for the farmer is eventually the best thing for the country as a whole, the entire nation would be benefited.

Teach Fruit Growing in Schools

THERE are a number of states where a smattering of agriculture is now taught in the rural public schools. As yet this instruction is far from being made so profitable to the children as it might be, but when we reflect that a short time ago the idea of teaching agriculture in school at all, would have been derided, we feel that a real advance is being made toward common sense and practical education.

If agriculture, or the science of farming, ought to be taught in a farming community, it stands to reason that horticulture, or the

science of fruit growing, should be taught in fruit growing sections. It is the general wish of parents, whatever activity they may be engaged in, that some, at least, of their children should follow the pursuit that has been their own life work. In the case of farming and fruit growing, this is far from the mere selfish inclination to keep the children near the old home. Both farming and fruit growing are essential to the nation's welfare. Fruit growing particularly, holds out such bright promise that the most ambitious parent need desire no more fortunate position for his son than that of the successful fruit grower, since this offers opportunity for a life of health, wealth, large usefulness and wholesome happiness.

Though, as in every other business, the unique accomplishment is reserved for the unusual person, yet any normally bright boy has in him the making of a good, successful fruit grower. During the formative years of youth, he should receive such instruction as shall make him appreciate how worth while and pleasant is the work which it is most desirable he should later undertake. Fruit farmers ought to consider these things deeply and, when the full meaning of proper instruction in the rural schools is realized, they can undoubtedly force such action from the authorities as shall fulfill the requirements of their communities.

War Advances Knowledge

IN THE devastated countries of Europe, agriculture has been given a severe setback, at least so far as the material results of farming are concerned, but perhaps the necessity for intensified production occasioned by war, may work there, as it certainly has done here at home, in the adoption of advanced methods in the effort to restore farms and orchards.

When our government sent out its call to the farmers of America, we realized that, while we had thought our methods good, they were not good enough to meet the urgent demand for greatly increased crops. In a spirit of patriotism the farmer turned to every source from which help could be derived. He sought out the county agent, he attended farmers' institutes, agricultural colleges boomed and informative bulletins were read eagerly. The practices recommended by experts were freely practiced.

What was the result? The information acquired and made use of brought big returns to the farmers and fruit growers. There is no going back. It is not likely that we will ever again hear a plea for the unsprayed orchard or the neglected soil. True, a large proportion of men might have lingered throughout their lives jogging on in the same rut, had they not been violently shaken out of it by the shock of war. Then in one year we leaped forward many normal years in knowledge and, finding the fruits of that knowledge sweet, we hold to it and will begin making our further advances from the very foremost line of the ground thus rapidly gained.

A wonderful help to fruit growers

That's what experts and beginners too, say about our "Inside Facts of Profitable Fruit Growing."

"Exceedingly useful to every fruit grower fortunate enough to possess a copy." Prof. W. L. Howard, University of California.

"This little volume is intensely valuable to fruit growers." Dr. J. C. Whitten, formerly University of Missouri.

"Send me 12 copies for my foremen in charge of my various orchards." Senator H. M. Dunlap, Illinois.

"Just the advice and information I have been hunting for, but knew not where to find." Ivan White, Kansas.

"Wouldn't take \$1.00 for the book and be without it." R. M. McMillen, M. D., West Virginia.

"Contains as much information as some bound books of 200 pages or over that I have read on that subject." H. L. Leonard, Washington.

This unusual book on fruit growing is plum full of things every grower ought to know more about; a book of solid, boiled-down information. This book contains 80 pages and 44 illustrations. Send the coupon below and a dime for a copy of it, prepaid.

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....Book of Fruit Trees and Plants, Free.

...."Inside Facts of Profitable Fruit Growing" (10c enclosed).

Name

Address

(Please give County and Street or R. F. D. number)



Price 10c
Free to customers

New Illustrated Catalog

Let us send you our New Illustrated Catalog, "Better Fruit." It describes the best varieties of fruit trees, small fruits, strawberries, shade trees, roses, shrubs, etc. It tells how to choose the best varieties for your climate and purpose; how far apart to plant; how soon you should get fruit; ripening dates of apples, peaches, pears, etc. The purpose of this catalog is to help you start right in growing good fruit or ornamental trees and plants. Many people say it does do that very thing.

"Enclosed herewith find an order for trees and shrub. The writer has had a dozen different catalogs from nurseries, and selected your house because I failed to find a single extravagant statement in your catalog." January 20, 1919, C. W. Burley, Pennsylvania.

If you are particular about getting first-class trees and plants at reasonable prices, direct-from-nursery, write for this catalog now, before you forget it.



6-cyl. Ignition Motor—21 H. P.

For nearly five years the Bush Car has been doing heavy duty all over this country. It's sold by mail only—we do not have distributors. Our Proposition is liberal beyond your expectations. It contains a good selling profit for you. Get ALL the information quick. Write us once to J. H. Bush, Pres., Dept. 148.

BUSH MOTOR CO.
BUSH TEMPLE, CHICAGO

BUSH PASSENGER CARS

The Bush Car for 1919, is the light, low, unexcelled in value. It is a car with a springing all the modern refinements which are in the equipment of the Buick Motor Car, for instance, at prices modest in the extreme. The Bush method of marketing the Bush Motor Car not only gives the owner a better car than he usually gets, but the Bush method of sales gives the owner the benefit of high quality at low prices. We let buyers know of the big things—the high-grade features—that go into the Bush Car for 1919.

Full Floating Rear Axle Willard Batteries
Two Universal Joint Drive Timken Roller Bearings
116-inch Wheel Base Plate Glass Rear Windows in Top
Copper Radiator Light Weight—2450 lbs.

The best material obtainable—the very highest quality construction coupled with that every one knows to be good equipment, such as Willard Batteries and Timken Bearings, insure long life to the Bush Car even under the most severe conditions. There is a Money-Back Guarantee given with every Bush Automobile to show you we mean just what we say about the quality of this car and to prove to you that your confidence in us will not be abused. Our Guarantee is in writing.

If You Own a Farm Lighting Plant You Need This Motor

If you could hire a strong man to do the chores and he would cost you only about a month's wages—and would work for a few cents a day after that—you would hire him mighty quick, wouldn't you?

That is all the Robbins & Myers Special Farm Motor will cost. It can be used in connection with any Farm Lighting Plant. This motor will furnish power to wash the clothes, churn, turn the cream separator or ice cream freezer, saw the wood, turn the grindstone or fanning mill, pump the water—in fact, perform all the odd jobs about the farm and home which require power.

With efficient labor so scarce, this motor will easily pay for itself in a short time and make life on the farm more comfortable for all the folks.

Send today for the free illustrated booklet describing this motor, also other types for farm service, and giving prices.

THE ROBBINS & MYERS COMPANY
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SPRINGFIELD, OHIO

Kindly mention American Fruit Grower when writing to advertisers

American Pomological Society

A Call for Recruits

"ITS OBJECT shall be the advancement of the science of pomology," is the declaration of the constitution. It shall exist "for the purpose of promoting and encouraging the culture of fruit," states the act of incorporation under the laws of the commonwealth of Massachusetts. In the call issued by Marshall P. Wilder nearly three-quarters of a century ago, delegates were requested from "all agricultural, horticultural, pomological and kindred societies in the United States and the Canadas," and the object of the association was declared to be "to promote pomology and the sciences upon which it depends;" and delegates were requested "to bring with them specimens of the fruits of their respective district." The last retiring president, Professor Hutt, in 1917, declared that the Society "is the clearing house for advanced pomological ideas, and the supreme court on varieties, nomenclature and pomological ethics."

These statements are broad enough to cover a continent, free enough for a democracy, interesting enough for every lover of fruits. Note that the word fruit is not defined; so is the society flexible, and able to adapt itself to the needs of each generation.

A long and honorable history is one of the safeguards of the society. It was organized in 1848, seventy years ago. It has had a continuous history. No other similar society is so old. Its membership has carried many honorable names from the first. Its reports are important practical guides and indispensable historical records. Its word has always been authority. The society has a proud record.

At first the purpose of the society was distinct and clear. Recently its place or mission has been obscure; so many subjects and interests have needed attention that its energies were in danger of becoming diluted and confused. Now, however, its field is clear again because other societies have been organized to cover certain industries. The recently established Congress of Horticulture will take care of the commercial and legislative phases. The Society for Horticultural Science represents what may be called the professional aspects, those specially interesting to science men in the government and the institutions. The American Pomological Society may now return to its original simple function to promote and encourage the production of fruit.

It Speaks to the Lover of Fruits

To the real amateur, to the lover of fruits, the American Pomological Society makes its appeal. To thousands of persons in all parts of the United States and Canada, in country and city and suburb, the society comes with help and encouragement—to the one who has but a small patch of berries, a little vineyard, a few trees of pleasant fruits or nuts, a little grove of oranges, specimen trees of persimmons or avocados, or of plants transferred experimentally from the wild. To the naturalist who searches for fruits in wood and fields the society also offers itself, and to investigators anywhere who bear enthusiasms for their work with fruits.

Equally does the society welcome the commercial grower, however large his plantations; it will appeal to him primarily in his amateur or fruit-loving interests. Many of the enthusiastic amateurs are also large and forceful growers for profit.

All this means that the society makes its primary appeal to the human interests attached to the growing of fruits. Its membership, therefore, should be many thousands rather than many hundreds. It retains for itself its original field of amateur fruit-growing and also of systematic pomology (with the fascinating subjects of varieties and nomenclature), as well as the scientific aspects that appeal to those who like fruits just because they are fruits.

Many plans are under way to make the old society useful to all these people in the provinces and states. It is hoped that a regular exchange of specimens and scions may be arranged with all the membership, being organized through the secretary's office so that proper inspection may be safeguarded. There should also be a regular publication going to the membership. A wide and intimate correspondence should

be developed. The experience of the country should be made available. This requires a secretary giving his time to the work, and this depends on large membership.

The secretary will send you this letter together with instructions for joining the society. I trust it will seem good to attach yourself to it.

L. H. BAILEY, President

Secretary Lake's Reply

Dear Fellow Fruit-grower—I take pleasure in sending you herewith a copy of a letter recently prepared by Dr. L. H. Bailey, our president, in answer to the inquiry frequently asked by pomologists and growers: "What can your society do for us?" Dr. Bailey's statement of the case is very much to the point and commends an appeal to American fruit growers rally under the banner of this society, effort to intensify and centralize the movement for more fruit, better fruit, better growing, and better fruit growers. The industry of America is entitled to make the premier one of its kind in the world. It is expanding and unfolding at a rapid rate. There is only one undeviating link in our chain of progress, and that is the maintenance of a sufficiently influential and representative central organization that can speak unqualifiedly for the industry; as well as to act as a medium of exchange for ideas and materials between its members.

The American Pomological Society, in its seventy years of active service in the history of American pomology, is the medium for this service, and with a nationwide membership it could adequately meet the requirement of the time to this end we bespeak your fellowship support.

We want to bring into practical operation the many plans that Dr. Bailey has wrought out for making of society all that its founders contemplated. We have a splendid opportunity now to accomplish much for the purpose: have a very able, very enthusiastic, resourceful, and tireless worker of wide recognition, to lead us; we are just the beginning of a new era of commercial activity and world brotherhood; we are participating in a tremendous effort to enrich the world with the products of the soil; we are constantly reminded of the importance of fruits in the human diet, and none enjoys and appreciates the merits of "the full dinner basket" with a variety of contents as does our American worker. May we not have you with us an effort to win this objective: "More fruits and better fruits for the American home."

Having a personal and working knowledge of the society for a period of thirty years the secretary does not hesitate to say that he regards his own purchase, years ago, of a life membership in the society as one of his very best pomological investments and feels that he can heartily and cordially extend to you an invitation to take out membership in the society, that you may become a recipient of its benefits, and contributor to its achievements.

You may become a biennial member by the payment of two dollars biennially, a life member by the payment of twenty-five dollars at one time; an institutional library, association or other organization may become a thirty-year member by the payment of twenty-five dollars on application; state, district and local horticultural and pomological societies may become biennial society members on the payment of ten and five dollars, respectively, the biennium.

Remit all funds to the treasurer, L. R. Taft, East Lansing, Michigan. Any further data concerning the organization, its objects, activities and membership will be cheerfully supplied on request to the secretary.

E. R. LAKE, Secretary.

Editor's Note—The best investment any fruit grower can make is a membership in the American Pomological Society. We cannot urge our readers too strongly to join the American Pomological Society.

Prospects for a good apple crop in New York state have decreased materially since the season advanced.

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MAILEY, President

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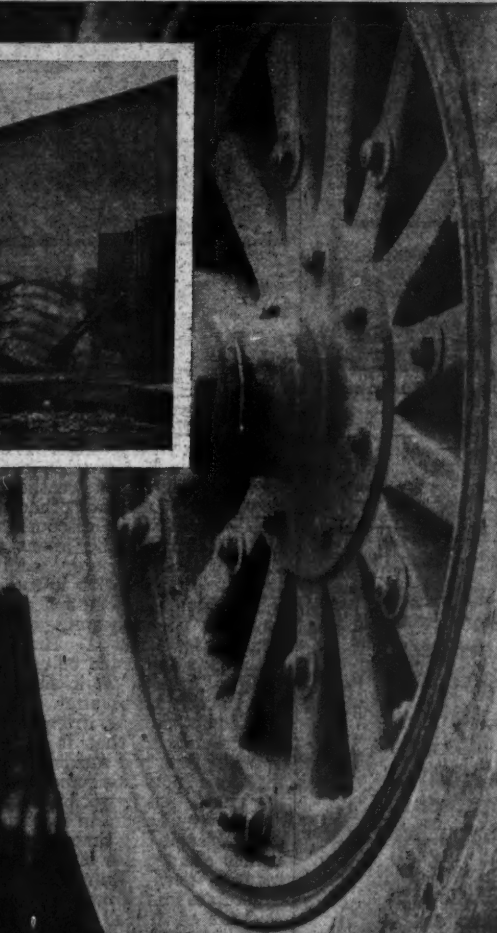
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"I AM thoroughly convinced of the advantages of pneumatics for rural hauling. And I am thoroughly convinced of the toughness of Goodyear Pneumatic Cord Truck Tires, for mine are standing up like Trojans on our gravel roads. I've never used solid tires and never expect to use them. I imagine you find many farmers who say about the same thing."—Howard Gunter, Rural Motor Expressing, Gunter, Texas

THE writer of the above statement has explained to us that the use of Goodyear Pneumatic Cord Truck Tires has enabled him to do a very large hauling business with the farmers of his county:

This is simply because these farmers know that Mr. Gunter's Goodyear - Pneumatic-equipped truck can transport their eggs, poultry, livestock and cotton farther, faster, more safely and more economically than their own wagons or solid-tired

trucks. As for truck repairs—a frequent source of expense to his neighbors owning solid-tired trucks—these have been prominent by their absence on the Howard Gunter truck; the cushioning of the pneumatics has had its customary effect.

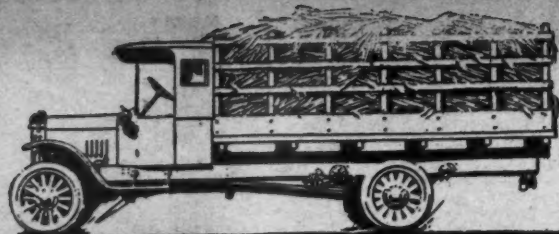
Mr. Gunter tells us he drives 9 to 10 miles on a gallon of gasoline, that he has never had farm produce injured in his truck and that his Goodyear Pneumatics have demonstrated the ruggedness needed to offset the grinding effect of gritty Texas pikes.

The unretouched photograph, reproduced above, shows the condition of one of his rear tires after 6,000 miles of more strenuous work than the average farmer requires of trucks and tires.

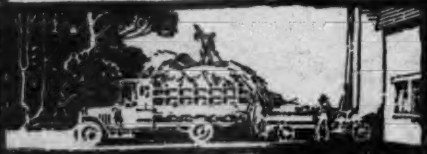
It is this toughness, visibly evident here and commonly noted by rural users, that affords the main reason why 75 per cent of all motor trucks, factory-equipped with pneumatics, are delivered on Goodyear Pneumatic Cord Truck Tires.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

GOODYEAR
AKRON



Chassis Prices
1 1/2 ton \$1965
2 1/2 ton \$2365
3 1/2 ton \$3465
FOB Allentown



The Motor Truck
bought to-day
without Electric
Starting and
Lighting will
be out of date
to-morrow

And on the Farm, Too

Load the thousand and one internal farm transportation problems on a husky, enduring Bethlehem. The time-devouring odd jobs that add dollars to your costs and hours to your working day. A Bethlehem Motor Truck on your farm will not only mean a connecting link between you and your market, but a production time and money saver as well.

The Bethlehem Internal Gear Drive, Electric Starting and Lighting System, superstrong frame, and powerful, economical engine represents more farm value per cost dollar than any other hauling apparatus.

The nearest distributor of Bethlehem Motor Trucks can tell you of the many economies a Bethlehem could effect on your farm. Examine a Bethlehem.

BETHLEHEM
— INTERNAL GEAR DRIVE —
MOTOR TRUCKS
— DEPENDABLE DELIVERY —
BETHLEHEM MOTORS CORP. ALLENTOWN, PA.

Trailmobile

Trade-Mark Reg. U. S. Patent Office

Faster Work at Picking Time

The Motorless
Motor Truck
Thousands
in Use

DIVISION No. 1
Light Four-wheeled
Trailmobiles for use
with passenger cars
or light trucks, 1,250
lbs., 1/2 ton and 1 ton.

DIVISION No. 2
Heavy-duty Four-
wheeled Trailmobiles
for use with
trucks, 1 1/2 tons, non-
reversible; 2 tons, 3 1/2
tons, and 5 tons, Re-
versible.

DIVISION No. 3
Trailmobile Semi-
Trailers: 2 tons; 3
tons; 5 tons; and 7
tons.

DURING the rush of picking time the fruit grower can save labor and time and reduce his worries by using a Trailmobile with a passenger car or light truck.

A Trailmobile and a passenger car can haul two or three loads to the railroad or to the city while a team hauls one; one driver gets two or three times as much done.

A Trailmobile doubles the capacity of a light truck, multiplies the driver's efforts and adds only about 12 1/2 per cent to the cost of operating the truck. It does the work of an extra truck but the cost is only one-third as great.

Many fruit growers increase their profits by hauling loose fruit to distant cities saving packing expenses and commissions.

Write for book-
let, "Economy in
Hauling".



The Trailmobile Company
507-527 E. Fifth St., Cincinnati, O.

Good roads are preserved by reducing the
load carried on each wheel.



Plant Fall Gardens Now

By J. T. Rosa, Jr.

THE FALL vegetable garden is too valuable an item to be so generally overlooked as it is among the most of our back yard growers. It can be made worth while if favorable conditions are provided. The hot weather, growth of weeds and general lack of moisture are the bad features which discourage gardening at this season, but they are not prohibitive. Perhaps lack of energy or interest has something to do with it too. The ideal scheme is to utilize the space which was occupied by the early spring crops, which are removed by August 1. However, a larger space than this could be used if available. The fall garden work should start just after midsummer, after a good rain or thorough soaking by irrigation has softened the ground, so that it can be worked. Weeds, grass, and remains of the preceding crops should be removed before starting work. An irrigation system of some sort is very helpful in starting the tender vegetables at this time. Several crops for winter storage are of best quality when planted now. Supplying fresh tender vegetables for fall use is another important function of the fall garden. In the early part of August such crops as beets, winter radish, turnips, and early varieties of snap beans can be planted. Several of the tenderer and quicker maturing vegetables can be sown still later, for instance, turnips, kohlrabi and early carrots planted at this time can be used fresh, and also stored for winter. Leaf lettuce, Scotch kale, spinach, radish and Chinese cabbage can be planted also.

To make the garden a fully efficient means of supplying the home with fresh vegetables throughout the season, these fall crops must not be overlooked. With a little extra energy devoted to the preparation and planting of these crops, and some care in cultivating, vegetables of as good or better quality can be produced in the fall as in the spring.

Chinese Cabbage

This is a new crop for home gardeners, and few people are yet acquainted with its good qualities. Chinese cabbage is also known as Petai or Wongbok. It is a splendid vegetable for those who are fond of "greens" and salads.

It grows best in a cool moist season, and is especially successful as a fall crop. The planting distance is in rows 24 inches apart, thinning the plants to stand six inches apart in the row. As the seed germinates very vigorously, the seed may be planted thinly. Rich finely prepared soil is desirable, but a good moisture supply is more essential. This crop grows faster than any other vegetable I know of, producing tremendous bulk on a small area, and it is quite hardy and very easy to grow.

Seed may be sown in the garden during August, and even as late as September 15 in central Missouri. It develops to perfection during cool moist weather of the late fall season. The plants can be used from October 1 to the last of November, leaving the heads standing in the open without protection. If the rows of Chinese cabbage were covered with a light mulch of straw, they might remain green for some time longer.

The only serious pest of Chinese cabbage is the green louse which also attacks cabbage and many other vegetables. It is easily controlled by spraying the under sides of the leaves with some tobacco preparation, such as Black Leaf 40, diluted at the rate of one teaspoonful per gallon of water.

Chinese cabbage can be used in several ways. In the spring the plants do not make very solid heads, so are generally used for greens. When the plants are well headed, as they generally are in the fall, the inner leaves are white, very tender and of good flavor. They may be used for

salad like head lettuce or cut up for discarding the outer green leaves for use as greens. Or the whole plant may be cooked like cabbage. The big white leaf stalks are as tender as the leaves, and are stringy except in hot weather. They should be eaten with the rest of the plant.

The general flavor is like that of cabbage or brussel sprouts, but the strong taste and odor so familiar in cabbage is lacking, so that people who possess particular tastes and object to ordinary cabbage may be very fond of the Chinese cabbage, either as a cooked vegetable or as salad.

The plants wilt rather quickly after cutting, unless kept in a cool place, where they will remain fresh for a week. The plants will remain fresh a little longer if pulled with the roots on, instead of cutting at the surface of the ground. It is best to grow Chinese cabbage in one's own garden so that the heads can be cut as needed for use. A row 30 or 40 feet long will provide an ample supply for a family that is fond of greens, salad, or cabbage.

This crop shows the good results of acclimatization to new localities. It is much more satisfactory than it was when first tried in the east a few years ago. A good seed stock when obtained, should be carefully kept. Seed several years old germinate readily on account of the vitality and vigor of this crop. Many failures have resulted from attempts to grow the Chinese cabbage as a late spring and summer crop. With a better understanding of its seasonal requirements there is no reason why it should not be grown much more extensively, especially by home gardeners, to whom it is so valuable because of its fast growth and tremendous bulk produced on small space. As a late fall salad, Chinese cabbage has been found most successful, and will be long felt want for a cheap salad at this season.

Kraut from Surplus Cabbage

Sauerkraut, lately called liberty kraut, may be made at home any time there is a small surplus of cabbage available. It is often some of the heads of the early cabbage crop burst open, so that they are salable and soon spoil. These should be turned into kraut. Small and salable heads should also be used. There is no winter vegetable more easily prepared, and if just a little care is given the details of preparation, it will keep months. It can also be canned and indefinitely. To make kraut, the cabbage heads are stripped of the outer green leaves and sliced thinly into a stone crock or wooden keg. There are cheap metal slicers available for this or the cabbage may be shaved into thin slices with a meat knife. The finer the slices the better the quality. The container must be absolutely tight, as much good kraut has been spoiled by the brine leaking away. It should be clean, scalded out if possible. As finely sliced cabbage is placed in the container, it is pounded down with a wooden spoon, a compact mass, and to force out the juice of the cabbage, which is to form the protecting covering against decay. Fine salt must be added at the rate of one pound to 40 or 50 pounds of sliced cabbage. This will also help to draw the water out of the cabbage. When the container is nearly full, the kraut should be covered with a clean piece of board, and weighted down so that the juice completely covers the cabbage. Kraut should be stored in a cool place and if made in summer, it is wise to cover the top of the container with hot paraffin.

Tulare county, California, has largely increased its area of cultivation this year. Much of the new acreage has been planted to raisin grapes.

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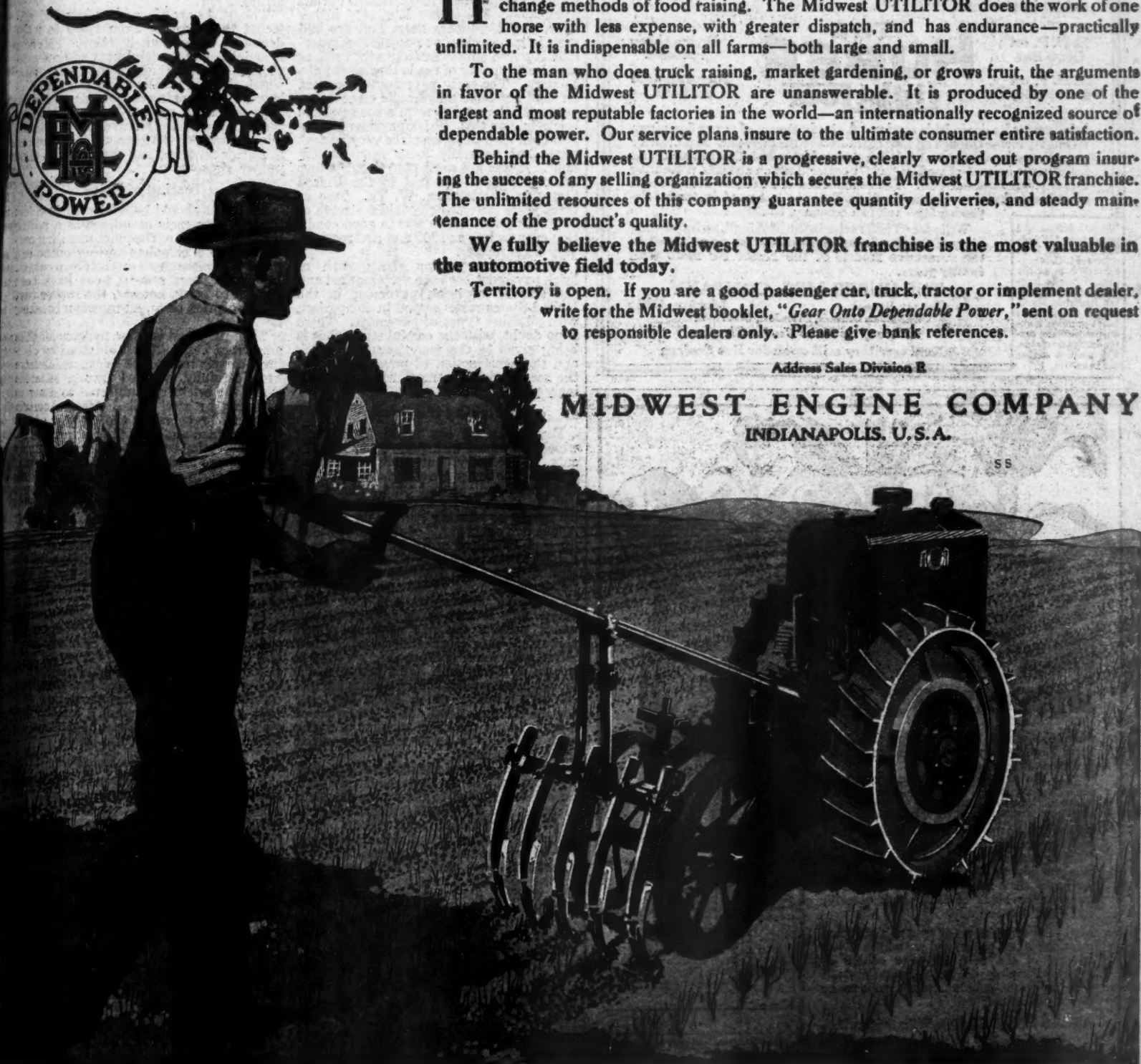
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Better Roads

Building of Brick Roads

By H. J. Kuehling

BRICK pavements have been used in the Netherlands for nearly two centuries. Some of them, which are over fifty years old, are still in fair condition. Byrne says: "The old brick pavements in Holland are made of hard burned brick about 8 1/4 inches long, 4 1/2 inches wide, and 2 1/4 inches deep, and are laid with joints as close as possible. Amsterdam is paved almost entirely with brick as are also a number of roads throughout the country. The early pavements were laid on sand but later a hydraulic cement was used with the sand to form a base and the bricks laid on this. Brick pavements have also been used in Japan since very ancient times but naturally were very crudely built. It was not until 1870 that the first brick pavement was laid in the United States in Charlestown, W. Va. Two or three years later the city laid a stretch of brick pavement which was in good condition even as late as 1900 and had received very little repairs."

Since this beginning the growth of brick pavement has been very marked and the amount of brick pavement in the United States ranks second in comparison with all other types of pavement. There is no doubt, with the careful study that is being given to the manufacture of brick and the construction of pavements, that the use of brick pavement will be increasingly great.

Making the Brick

Paving bricks are made from clays which are mixed with some other ingredients, if necessary, but more often from shales. The shales are especially prevalent in Illinois, Indiana and Ohio. Shales are usually obtained by open pit excavation by means of blasting and steam shovels. About two cubic yards of shale are needed for each thousand of brick. The shale is hauled to the plant in small cars and there ground into comparatively fine powder under heavy rolls which are several feet in diameter and about one foot wide. These rolls revolve on a perforated pan which permits the fine shale to screen through. This crushed material is then mixed with water and put through what is known as a pug mill. This pug mill is a trough arrangement having a shaft mounted with paddles which move the clay toward the outlet end. It is somewhat of a trick to get the exact amount of water with this clay so as to make the mixed material workable.

After being mixed the material is pushed by means of a screw arrangement through an opening shaped to determine the form of brick, and the plastic material runs out in the form of a continuous ribbon. This ribbon is cut by various methods to form the individual bricks. In some cases it is cut one at a time, and in others, especially in the so-called Dunn cut-lug-bricks on the vertical fibre bricks, a considerable number at a time.

Bricks after being formed are treated in one of two ways. They are in some cases repressed in a die which merely serves to round the edges and stamp the name on the brick. In the other case, instead of subjecting the brick to repressing the lugs are cut in the sides by means of wires traveling through guides, or by means of shaping the opening from which the clay ribbon comes. The brick in which the lugs are formed with wire are called wire-cut-lug-brick. This is a patented process and has had quite a good deal of favor in the public eye. However, recently the so-called vertical fibre brick has come into very prominent use. This brick is nothing more than ordinary brick laid with the flat side up, or laid with the cut surface up.

After the bricks have been cut and repressed, if so treated, they are piled on

cars in a manner to permit of free circulation of air and are then placed in a drying chamber and subjected to heat. It requires from 20 to 60 hours to properly dry these bricks, depending upon the plant arrangement.

The bricks are placed in a kiln and subjected to a heat of from 1,500 to 2,000 degrees in order to vitrify them. This heat is maintained for such length of time as to thoroughly heat them to the center, after which the kiln is closed and the bricks allowed to cook, or in other words, to anneal. This annealing process is what toughens them and requires several days' time in the kiln. After this the kilns are unsealed and the brick removed and divided into their proper classes.

Testing of Brick

All bricks should be subjected to a test to determine their usefulness as a paving material. Most of the manufacturing concerns have a complete testing outfit and keeps very close check on their own output. In former years several tests have been applied to brick, namely, the rattler test, the absorption test, and the cross breaking test.

The rattler test is a test to determine the amount of wear. This is obtained by placing a certain number of bricks which have been carefully weighed into a machine where the bricks are subjected to a severe battering by steel balls. After a certain number of revolutions the amount of loss is determined and thus the test arrived at. The absorption test is made by thoroughly drying some brick and then after weighing immerse them for a certain length of time in water in order to determine the amount of moisture that they will absorb. This test is made because the amount of water they absorb determines to a certain extent the amount of damage by freezing. The cross breaking test is one to determine the tensile strength of the brick and is considered of the least importance of the three.

However, in later years the best practice is to have merely the rattler test on the supposition that any brick that will properly pass the rattler test will easily meet any of the requirements of absorption or strength. This latter test has been very carefully studied by various testing societies and is down to such a science that very good comparisons can be made to determine the quality of the brick.

Laying the Brick

SUBGRADE—The subgrade for brick pavement should be prepared with the same amount of care that is used in the subgrade of any other pavement. It should be well compacted and any poorly drained or spongy places either dug out or properly cared for with tile drain.

FOUNDATION—In the past a great many brick pavements have been laid on sand foundation, especially where the soil itself was sand. This is true in a great many of the smaller cities and many of these pavements have been used for as long as twenty years.

In other places old brick pavements have been used as a foundation for new brick pavements with good satisfaction, so all of the soft places in the street had been ferreted out by traffic in using the old street.

In some few cases brick pavements have been laid on old gravel or macadam streets. As a rule this is not satisfactory as the crown of the old street is not satisfactory for the laying of the brick and in destroying the old hard surface the subgrade condition becomes somewhat similar to a graded street.

By far the vast majority of brick pavements are laid on a prepared subgrade.

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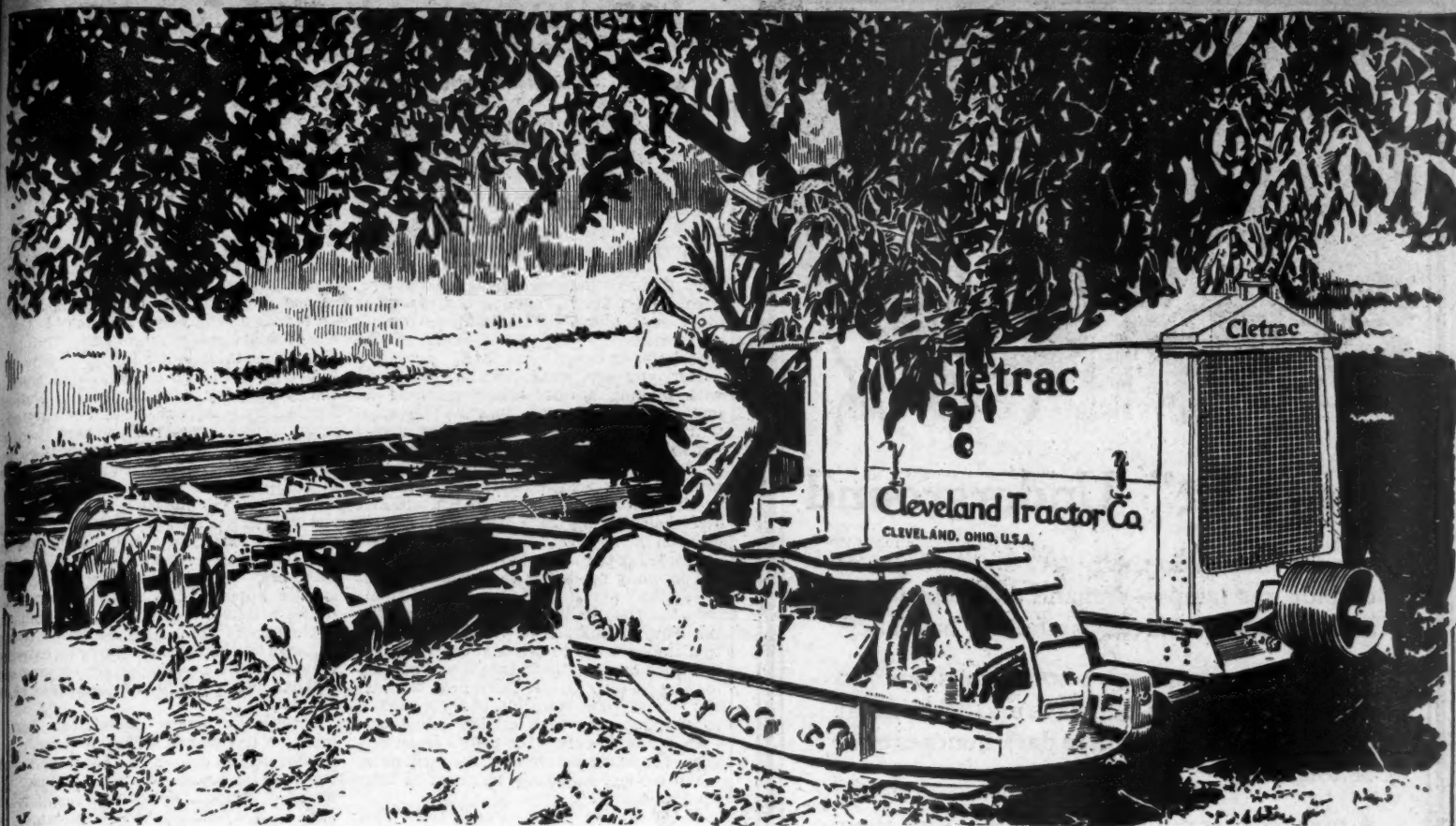
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Finding an Outlet for Fruit

By E. E. Reed, Iowa

YOU CAN lead a horse to water, but you can't make him drink," said a wise man of the bygone days. And again, speaking figuratively, you can lead a man to water, but you can't make him drink either; which all goes to show that you, I, or the other fellow don't often take anything that we don't want, especially if it is something to eat.

Every year we hear someone tell about all the potatoes, apples, and other perishable produce that are dumped in the Chicago River, New York harbor, or some other such place. Without investigating any farther, he puts all the blame on the wholesaler or commission man.

But, you say, what has that got to do with making a man take something he may or may not want? Just this; the solution of our problem of the wastage of perishable products lies, not in eliminating or jailing the middleman, but more in producing for market only that class of products which is worthy of the market, and then getting them before the people in such a way as to arouse the public appetite for them.

Too many producers think that "apples are apples" and ship all they raise, no matter what the quality. Many of them ship the fruit in bulk; then wonder why it is that they get word back that their produce is in such bad condition that it will not pay for the freight. Until these men see that the primary consideration in their work is to produce only high quality goods and then get them before the people in an economical and attractive way, they will never make money, especially in years of large production.

If the market is not already to be had, one must be created. That sounds impossible, but it can be done for it has been done. Back in the 90's, the oranges produced in California and Florida formed such a glut on the market that many of the growers threatened to cut out their groves and give up the game. Each year they were producing at a loss. At the present time, though the total production far exceeds that in the 90's, there is a ready market for all the citrus products grown in the country. One city of 100,000 population in the north, for instance, took 18 carloads of oranges and grapefruit in 1909-10. In 1914, it took 150 carloads. The solution came in the application of good business methods in getting the fruit before the consumer. Co-operation got high quality fruit to market efficiently, and advertising sold it.

The same thing proved to be true of the apple industry in the northwest. In 1908, Nashville, Tenn., handled only one car of northwestern apples. Then advertising was tried. The next year, 17 carloads were sold, and in 1912, 30 carloads were disposed of. The solution here was co-operation and advertising again.

Reaching the Consumer

There may be said to be three different channels through which apples reach the consumer from the orchard. These are co-operative marketing, carlot shipments by large growers, and direct sales. Each one of these channels requires separate treatment on both the marketing phase and the means of advertisement which are adaptable.

First, the co-operative methods for disposing of the crop. In this case, an association is formed by a large number of growers, each one taking out a certain amount of stock to give working capital. A manager is hired, who spends the summer in going about among the growers advising them in their methods and estimating the amount of fruit on the trees. With this as a basis, he makes trips to various towns and cities and by advance sales or agreements secures a market for the crop. When the crop is harvested, the manager sees to it that the grading and packing are up to the rules. He then uses the market information he has gained to get the fruit to the proper places at the proper times and thus secure the highest returns.

This method of marketing relieves the grower of the responsibility of disposing of his own crop and permits him to concentrate on the production of high class fruit. It is a comparatively cheap method, the charge made by the Eastern Nebraska Fruit Growers' Ass'n being 6%, the Martinsburg Fruit Exchange of West Virginia 10%, and the Fennville Fruit Exchange of

Michigan 5%. It also means larger returns, one larger grower in Nebraska having gained \$5,000 by marketing through the association there. Such associations always guarantee high class fruit and establish reputations which make their fruit bring a premium on the market.

Advertising Sells Fruit

Another thing which co-operative selling lends itself to readily is advertising. The single grower can do a small amount of advertising, but only by organization can an extensive campaign be put on. One of the best methods is the slogan, "An apple a day keeps the doctor away," has become famous and has no doubt added much to the popularity of the fruit. National Apple Day is advertised and celebrated in many sections, especially where there are active associations. This lends itself well to the use of posters, handbills, window advertising, and so on. It is highly desirable on occasions such as this to obtain the co-operation of the commercial clubs in the towns and cities. Special window displays in the grocery stores will mean profits to both the grower and gr cer. Serving special apple dishes in restaurants and hotels will help a good deal, and publicity in the papers will induce the people to buy.

Large associations can carry on extensive magazine and newspaper advertising such as that which put Skookum apples before the public.

Practically every association has its label or trademark which is printed and pasted on the ends of its boxes and sometimes on its wrappers. Thus the big "Y" brand of Yakima Valley and the Skookum brand have become widely known.

Nine Booklets Issued

The well-known California Fruit Growers' Exchange has issued nine small booklets which are available to all who desire them. These contain information on what the exchange is, how lemons and oranges are raised and packed, their food value, uses, and such like. The same thing can be done with the apple, which probably lends itself even more readily to such advertising than do the citrus fruits because of a greater variety of uses. These booklets can be distributed at fruit shows and in large fruit stores. Booklets having recipes for the apple can be placed in the heads of barrels or in boxes, and, by increasing the usefulness of the apple to the housewife, increase the consumption.

The second method of marketing apples is that employed by individual growers who ship fruit in carlot quantities. One means sometimes used by this class of growers but which is unsatisfactory as a rule is the sale of apples on the tree. This relieves the grower of the trouble of harvesting the crop but usually results in careless picking of the fruit and breaking the trees due to the poor class of pickers hired by the buyer. Nor does this method open any way for the grower to advertise his brand.

Most of these growers pick and pack their fruit themselves and deliver it to commission men or wholesale houses under agreements entered into with the firms or their field representatives. These agreements usually cover delivery at the orchard, on the track at shipping point or at the destination, the latter being most common. Some growers ship on consignment with no previous agreement.

"Red Stave Brand"

These last methods make possible the use of a distinct brand, which may be printed on labels and pasted on the ends of the boxes and barrels. That is the same as is done by most co-operative associations. Some growers use other means which are distinctive and show at a glance where the apples were raised. Joseph Weston of Belton, Mo., markets his first grade fruit under the "Red Stave Brand," three staves of each barrel being dyed red. He had registered his trade mark and established a reputation which makes the three red staves stand for high quality wherever they are found.

Individual growers sometimes place a booklet of recipes in each box or barrel or at least a note which will advertise the apple in general and their brand particularly. The following notes are illustrative, one being of the "Red Stave Brand," and

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Kindly mention American Fruit Grower when writing to advertisers

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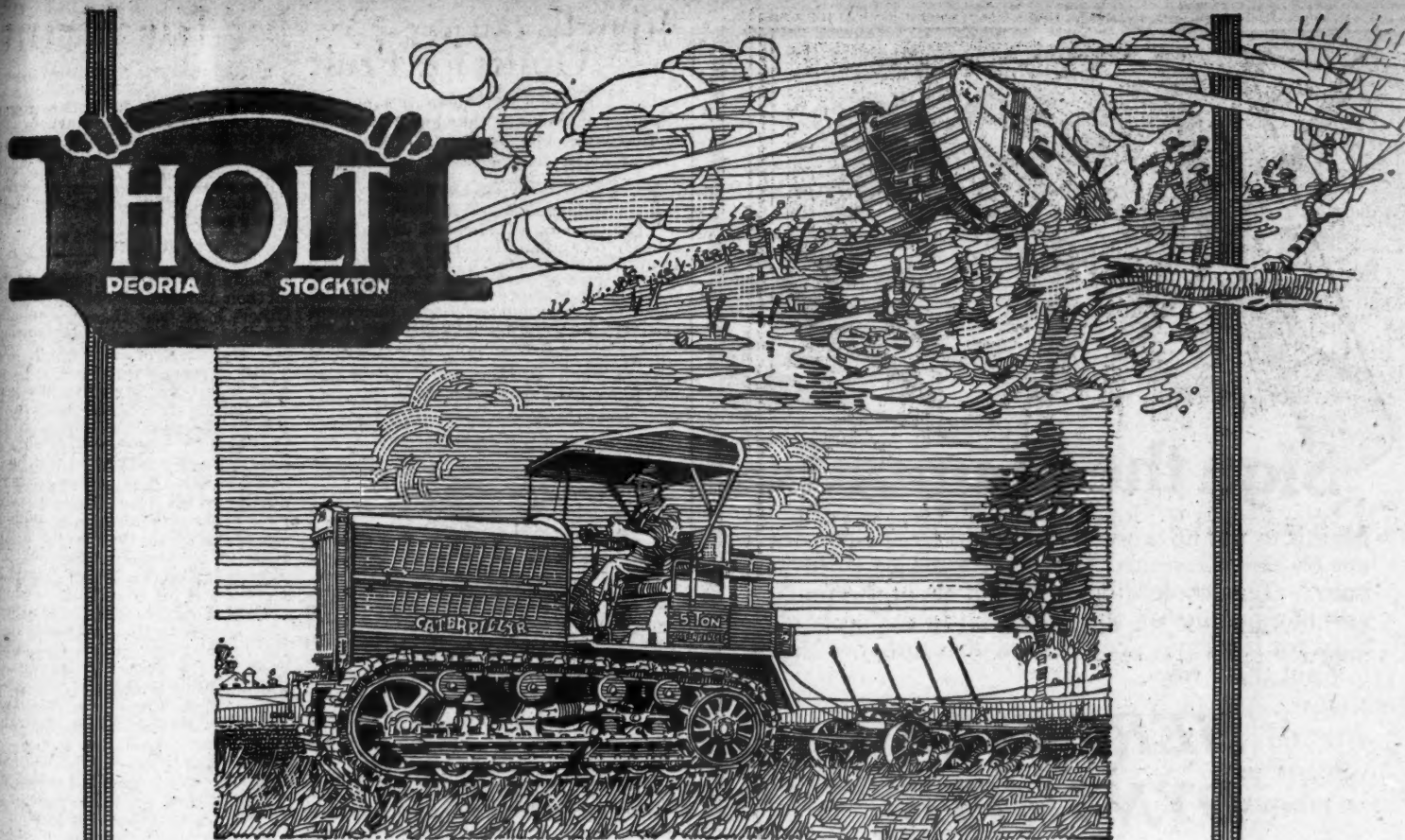
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The record of the "Caterpillar" is your positive proof that it will do your work—belt and draw bar—when, and as you want it done. Plow as deep as you like—faster than you ever plowed before; disc, harrow and seed your land—all with a "Caterpillar". Each job will be done *right* and on *time*.

The five ton "Caterpillar" is different from any tractor ever built. It develops upwards of 3,100 pounds draw bar pull. Plowing speed *three miles per hour*. Pulls easily four 14 inch plows, 6 to 10 inches deep. Carries and lays its own track.

If you should strike mud or sand it can't stop the "Caterpillar". Turns in its own length, making close fence corner work simple. Equipped with *three speeds* and reverse. Travels on the road over *five miles per hour*.

You will be interested in receiving free literature describing each feature of "Caterpillar" supremacy. Write

the HOLT Manufacturing Co., Inc.
There is but one "CATERPILLAR"—HOLT builds it.

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"Daylight" Underground

700,000 miners do their work by the light of carbide gas lamps—demand and depend absolutely upon its steady unfailing brilliancy.

Carbide gas supplies 24-hour "sunshine" to all kinds of tunnels, subways and other great construction works where dark hours cannot be tolerated.

A quarter of a million farm homes owe their bright and modern cheerfulness to carbide gas lighting and cooking—the Panama Canal, lighthouses, buoys, hospitals, schools, and churches everywhere are conveniently and economically lighted the same efficient way.

Carbide gas is welding broken machinery for factories and railroads, speeding and cheapening shipbuilding—literally salvaging millions of dollars daily in material and time.

By all means write for the free booklet telling all about this wonder gas made from Union Carbide.

UNION CARBIDE SALES COMPANY

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901

Dept. 135

HARRISON'S NURSERY

20 POT BULBS, 20c.
6 New Purity Freesia, 1 Babiana, 1
Broomrape, 4 Star Bethlehem, 1 Double
Rosebud, 1 Buttercup, and 4 Grand
Duchess Oxalis, and 1st. of New
Winter blooming Spencer Sweet Pea and
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Catalog and growing instructions.
ALL MAILED FOR 20 CENTS
The catalog, free, of Hyacinths, Tulips,
Harcourt, Peonies, Lilacs, Irises, Phloxes,
Hardy Plants, Shrubs, Vines, Berries in
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A Farquhar Hydraulic
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Triple Plated with Black Tin. Guaranteed to remain
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ALL STEEL KRAUT CUTTER
Size 8 x 22 in., 1/2 in. Rod, 6 knives, Remove-
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Direct To You 2 H-P. Pulls 2 1/2

Engine complete on skids—ready
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2146 Oakland Avenue KANSAS CITY, MO.
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Finding an Outlet for Fruit

By E. E. Reed, Iowa

"YOU CAN lead a horse to water, but you can't make him drink," said a wise man of the bygone days. And again, speaking figuratively, you can lead a man to water, but you can't make him drink either; which all goes to show that you, I, or the other fellow don't often take anything that we don't want, especially if it is something to eat.

Every year we hear someone tell about all the potatoes, apples, and other perishable produce that are dumped in the Chicago River, New York harbor, or some other such place. Without investigating any farther, he puts all the blame on the wholesaler or commission man.

But, you say, what has that got to do with making a man take something he may or may not want? Just this; the solution of our problem of the wastage of perishable products lies, not in eliminating or jailing the middleman, but more in producing for market only that class of products which is worthy of the market, and then getting them before the people in such a way as to arouse the public appetite for them.

Too many producers think that "apples are apples" and ship all they raise, no matter what the quality. Many of them ship the fruit in bulk; then wonder why it is that they get word back that their produce is in such bad condition that it will not pay for the freight. Until these men see that the primary consideration in their work is to produce only high quality goods and then get them before the people in an economical and attractive way, they will never make money, especially in years of large production.

If the market is not already to be had, one must be created. That sounds impossible, but it can be done for it has been done. Back in the 90's, the oranges produced in California and Florida formed such a glut on the market that many of the growers threatened to cut out their groves and give up the game. Each year they were producing at a loss. At the present time, though the total production far exceeds that in the 90's, there is a ready market for all the citrus products grown in the country. One city of 100,000 population in the north, for instance, took 18 carloads of oranges and grapefruit in 1909-10. In 1914, it took 150 carloads. The solution came in the application of good business methods in getting the fruit before the consumer. Co-operation got high quality fruit to market efficiently, and advertising sold it.

The same thing proved to be true of the apple industry in the northwest. In 1908, Nashville, Tenn., handled only one car of northwestern apples. Then advertising was tried. The next year, 17 carloads were sold, and in 1912, 30 carloads were disposed of. The solution here was co-operation and advertising again.

Reaching the Consumer

There may be said to be three different channels through which apples reach the consumer from the orchard. These are co-operative marketing, carlot shipments by large growers, and direct sales. Each one of these channels requires separate treatment on both the marketing phase and the means of advertisement which are adaptable.

First, the co-operative methods for disposing of the crop. In this case, an association is formed by a large number of growers, each one taking out a certain amount of stock to give working capital. A manager is hired, who spends the summer in going about among the growers advising them in their methods and estimating the amount of fruit on the trees. With this as a basis, he makes trips to various towns and cities and by advance sales or agreements secures a market for the crop. When the crop is harvested, the manager sees to it that the grading and packing are up to the rules. He then uses the market information he has gained to get the fruit to the proper places at the proper times and thus secure the highest returns.

This method of marketing relieves the grower of the responsibility of disposing of his own crop and permits him to concentrate on the production of high class fruit. It is a comparatively cheap method, the charge made by the Eastern Nebraska Fruit Growers' Ass'n being 6%, the Martinsburg Fruit Exchange of West Virginia 10%, and the Fennville Fruit Exchange of

Michigan 5%. It also means larger returns, one larger grower in Nebraska having gained \$5,000 by marketing through the association there. Such associations always guarantee high class fruit and establish reputations which make their fruit bring a premium on the market.

Advertising Sells Fruit

Another thing which co-operative selling lends itself to readily is advertising. The single grower can do a small amount of advertising, but only by organization can an extensive campaign be put on. One of the best methods is the slogan, "An apple a day keeps the doctor away," has become famous and has no doubt added much to the popularity of the fruit. National Apple Day is advertised and celebrated in many sections, especially where there are active associations. This lends itself well to the use of posters, handbills, window advertising, and so on. It is highly desirable on occasions such as this to obtain the co-operation of the commercial clubs in the towns and cities. Special window displays in the grocery stores will mean profits to both the grower and grocer. Serving special apple dishes in restaurants and hotels will help a good deal, and publicity in the papers will induce the people to buy.

Large associations can carry on extensive magazine and newspaper advertising such as that which put Skookum apples before the public.

Practically every association has its label or trademark which is printed and pasted on the ends of its boxes and sometimes on its wrappers. Thus the big "Y" brand of Yakima Valley and the Skookum brand have become widely known.

Nine Booklets Issued

The well-known California Fruit Growers' Exchange has issued nine small booklets which are available to all who desire them. These contain information on what the exchange is, how lemons and oranges are raised and packed, their food value, uses, and such like. The same thing can be done with the apple, which probably lends itself even more readily to such advertising than do the citrus fruits because of a greater variety of uses. These booklets can be distributed at fruit shows and in large fruit stores. Booklets having recipes for the apple can be placed in the heads of barrels or in boxes, and, by increasing the usefulness of the apple to the housewife, increase the consumption.

The second method of marketing apples is that employed by individual growers who ship fruit in carlot quantities. One means sometimes used by this class of growers but which is unsatisfactory as a rule is the sale of apples on the tree. This relieves the grower of the trouble of harvesting the crop but usually results in careless picking of the fruit and breaking the trees due to the poor class of pickers hired by the buyer. Nor does this method open any way for the grower to advertise his brand.

Most of these growers pick and pack their fruit themselves and deliver it to commission men or wholesale houses under agreements entered into with the firms or their field representatives. These agreements usually cover delivery at the orchard, on the track at shipping point or at the destination, the latter being most common. Some growers ship on consignment with no previous agreement.

"Red Stave Brand"

These last methods make possible the use of a distinct brand, which may be printed on labels and pasted on the ends of the boxes and barrels. That is the same as is done by most co-operative associations. Some growers use other means which are distinctive and show at a glance where the apples were raised. Joseph Weston of Belton, Mo., markets his first grade fruit under the "Red Stave Brand," three staves of each barrel being dyed red. He had registered his trade mark and established a reputation which makes the three red staves stand for high quality wherever they are found.

Individual growers sometimes place a booklet of recipes in each box or barrel or at least a note which will advertise the apple in general and their brand particularly. The following notes are illustrative, one being of the "Red Stave Brand," and

Continued on page 20

Kindly mention American Fruit Grower when writing to advertisers

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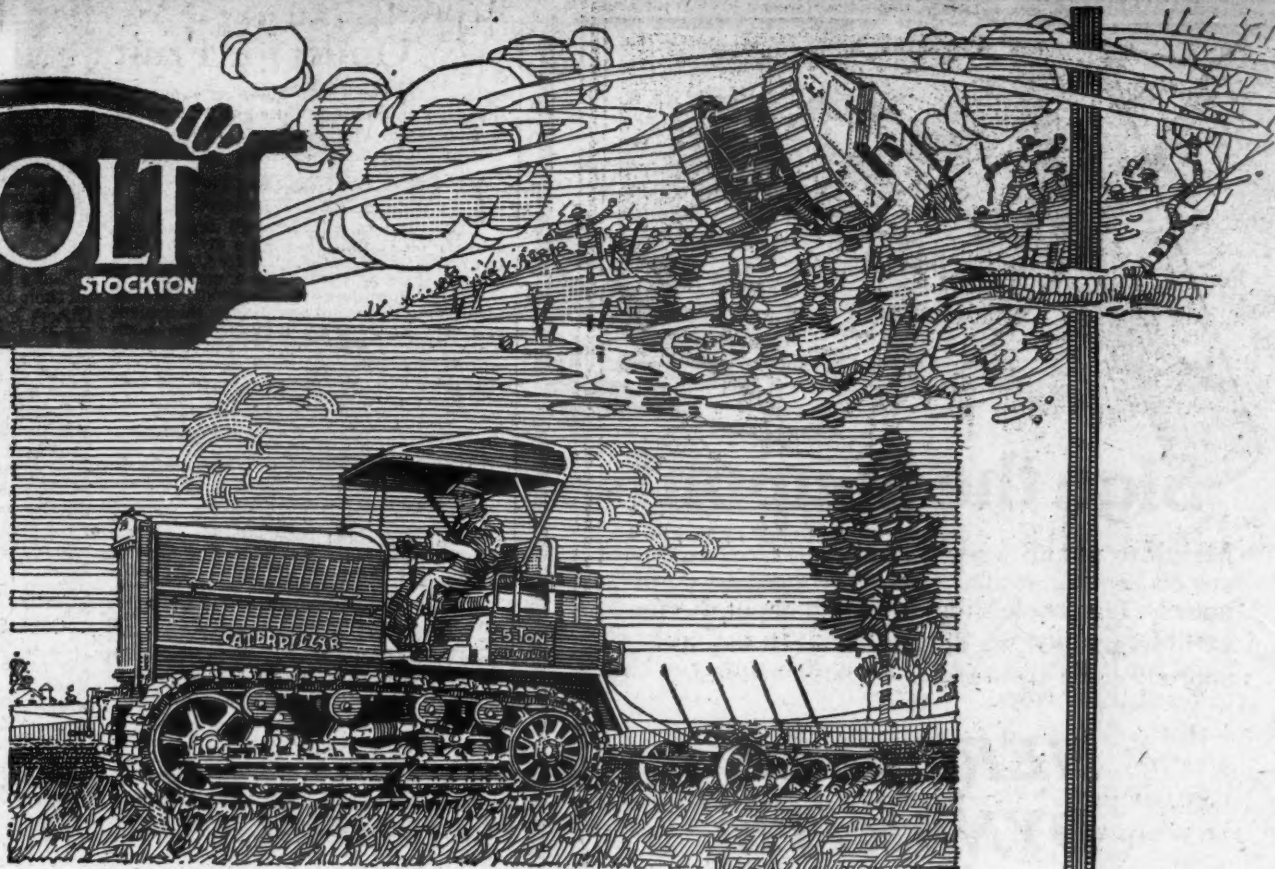
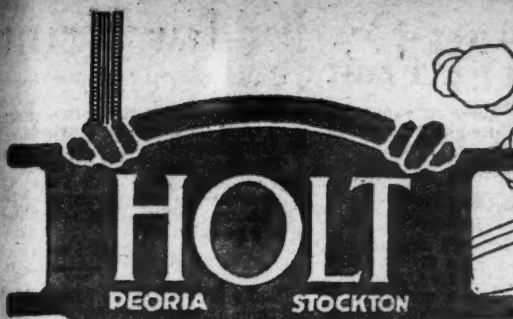
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yesterday today tomorrow PERFORMANCE

The "Caterpillar" has always been a *continuous* performer—dependable for *any* work at *any* time.

Yesterday it did things that *made world war history*.

Today's "Caterpillar" is an exact duplicate of those sturdy engines that moved guns, food, ammunition and supplies ever forward—the final tractor achievement of Holt and Allied army engineers.

CATERPILLAR

The record of the "Caterpillar" is your positive proof that it will do *your* work—belt and draw bar—when, and as you want it done. Plow as deep as you like—faster than you ever plowed before; disc, harrow and seed your land—all with a "Caterpillar". Each job will be done *right* and *on time*.

The five ton "Caterpillar" is different from any tractor ever built. It develops upwards of 3,100 pounds draw bar pull. Plowing speed three miles per hour. Pulls easily four 14 inch plows, 8 to 10 inches deep. Carries and lays its own track.

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You will be interested in receiving free literature describing each feature of "Caterpillar" supremacy. Write

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There is but one "CATERPILLAR"—HOLT builds it.

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Atlanta, Ga.
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Sign the Coupon!

Mail it to us and we will send you, free, a copy of our 68 page illustrated book "Progressive Cultivation." This book will tell you all about the many uses of dynamite on the farm and in the orchard. Send for it today. You'll need it before you start to plant those trees.

HERCULES DYNAMITE

will help you to plant your trees, cultivate your bearing orchards by blasting between the rows, dig your ditches and clear your waste land. And it will do all these things in half the time and at less than half the cost of the old fashioned methods.

Send for your copy of "Progressive Cultivation"; follow the directions that you find in it. It will save money for you this year and make money for you in the years to come.

HERCULES POWDER CO.

75 West 10th St.

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Gentlemen: Please send me a copy of "Progressive Cultivation."

I am interested in dynamite for

Name

Address

Turn A Valve and Cook

The OLIVER Gas Burner makes any stove or range a gas stove. No coal or wood. Cooks and bakes better. No fires to start. You regulate flame. Saves money. Work, dirt. Burns coal-oil (kerosene). Simple, safe, easily put in or taken out. No damage to stove. Lasts a lifetime. Thousands of delighted users. Use seven years. Write us for FREE literature telling how 2 gas burners equals 97 lbs. coal. Agents Wanted.

Oliver Oil-Gas Burner & Machine Co.
1323 N. 7th St., St. Louis, Mo.

Make Your Stove A Gas Stove

WAS \$100 — NOW \$57

Here is the famous Oliver Typewriter offering you a saving of \$43. The \$57 Oliver is our identical \$100 model, brand new, never used. Our finest and latest model. The same as used by many of the biggest concerns. Over 700,000 sold. We send an Oliver for Free Trial. Not one cent down. If you want to keep it, pay us at the rate of \$3 per month until the \$57 is paid. This is the greatest typewriter bargain in the world.



Write today for our new book, "The Typewriter on the Farm."

The Oliver Typewriter Co.
370-C Oliver Typewriter Bldg.
Chicago, Ill. (11.07)

FENCE

Direct to Farmer at Wire Mill Prices

CATALOG FREE

KITSELMAN BROS. DEPT. 206 MUNCIE, INDIANA

U.S. Government Barbed Wire!

Buy Now!

For a limited time we offer extra heavy 12 gauge 4 point barbed wire at big savings. Purchased by us from the U.S. Government at less than cost of making. 6-8 inch barbs spaced 8 inches apart coated with best paint. Put up in rolls of 100 ft., weighing 25 lbs.

| | |
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| No. 2-6X100—Coiled, 625 reels, per reel | \$1.80 |
| No. 2-6X101—100 reels, per reel | 1.95 |
| No. 2-6X102—50 reels, per reel | 2.00 |
| No. 2-6X103—25 reels, per reel | 2.05 |
| No. 2-6X104—Less than 25 reels, per reel | 2.10 |

HARRIS BROTHERS CO.—Dept. 3X-285
35th and Iron Streets, CHICAGO

Finding An Outlet for Fruit

Continued from page 18

the other of apples produced on an orchard at Berryville, Virginia.

"RED STAVE BRAND"

Barrel and Boxed Apples
Trade Mark Registered

"The value of a trade mark depends absolutely on the merits of the goods which bears this trade mark; therefore, you may depend upon it that when a company or individual brands its or his goods, thereby identifying them and advertising their identity, they are going to put quality into them. They know if they do not their first sales will be their last."

If the quality of apples in this barrel does not prove satisfactory, report to us or to your dealer; if it does, report to others.

JOSEPH WESTON, Proprietor,
Spring Branch Fruit Farm,
Belton, Missouri.

IMPORTANT

To Critical Apple Buyers

Fruits may come and Fruits may go, but the time-honored Apple, since the days of Adam and Eve, is the most Universal Staple Fruit in every Home under the sun.

The Apples in this package were grown, sprayed, thinned, and packed under the most modern methods. Our aim was to produce and deliver an Apple in its highest state of Perfection to the Consumer, as to flavor, color, size and freedom from fungous disease and insect blemish.

Thanking you in advance for your courtesy in recommending our Apples to others.

Selling Direct to Consumer

Last of all comes the grower who cannot produce in carload lots or who has a large enough market close by to make shipment unnecessary. It is this grower who must use every possible means at hand for advertising and disposing of his crop.

Some of these growers who are close to fair-sized towns or on main traveled roads draw local trade by means of signs out near the road where passers-by can see them readily, thus disposing of their entire crop, if not too large. The important thing to consider here is attractiveness. If the farmer wants maximum sales at his orchard, he must have his property neat and well-kept at all times and must have a sign which is catchy and attractive. D. J. Lane, who keeps a truck and poultry farm on the main road between Minneapolis and Lake Minnetonka, in Minnesota, and many other farmers sell practically all their produce in this way.

Some small orchardists also resort to the public market. Every large city and many small ones have public markets for fresh fruits and vegetables. Ready sale may sometimes be had for fruit at such markets even in rather large quantities. Oscar Bräman, of Kent County, Mich., for instance, disposed of his crop of 2,500 bushels on the public market at Detroit this last fall.

At Wellborn, Kan., near Kansas City, is a successful community market where the farmers gather two evenings during the week, bringing their fresh fruits and vegetables with them. The market is on a main highway from Kansas City and near an electric car station and offers easy access to the city people who are out for an evening ride. It also presents an opportunity for the farm folk to get together in the evening.

Peddling apples, especially in small towns, is often resorted to by small growers near town. It saves the expense of costly packages but requires considerable time, the same as the public market. Some growers use it with considerable success, especially in years of large production.

Another course taken by some growers of extra fancy fruit is that of selling by mail. This may be done by the use of return postal cards or letters with return cards enclosed. These letters should be typewritten or printed so as to be legible and attractive and should have a heading which will advertise the farm or brand. "Cut and dried" terms must be left out, and the letter made personal and catchy enough to arouse the interest and appetite of the prospective customer and then offer an easy method of ordering—by phone or the return postal card. The following type of letter was used successfully by one grower:

SHADYSIDE FRUIT FARM

8—, Ohio, Sept. 5, 1917.

Dear Mrs. Franklin:

Wouldn't you like to eat some big juicy Elberta peaches, fresh from the trees?

I will have a few bushels of this delicious

American Fruit Grower

fruit for my selected trade next week, by auto delivery I can bring them to your door within five hours after they have been picked.

Taken directly from the trees to your home-grown, and hand-selected, the peaches are better for both eating and canning than those on the markets. The price for the large size will be \$2.50 a bushel.

They can be delivered Tuesday or Thursday of next week. But I can promise to fill only the earliest orders; so kindly call by phone—Jefferson 602—or use the enclosed postal card.

Yours very truly,

Some growers have sent such letters to all their acquaintances in the nearby towns. Others have sent them to those who use telephones or automobiles. To send them to every person or every family in town is waste of money for one can be sure of good many families who will not buy.

Soliciting trade throughout the country side by means of the telephone or mail practiced by some growers. One grower who ordinarily sold his crop in the field at the station, in a year of extra large production in his state obtained the names of most of the produce men in all of the cities and towns within 50 miles radius and called them all by phone. These short, snappy advertising talks sold 21 carloads raised himself and his neighbors.

C. E. Forkner, of Athens, Tex., sent return postals to the bankers in towns along the railroad on which he was located, requesting the names of the reliable retail grocery firms which handled considerable fruit. These firms were then sent postal cards advertising the quality of his product and giving quotations, including express rate to their town. In this way, Mr. Forkner built up a large retail express trade.

One method which has proved profitable to some growers is that of leasing an empty store in a nearby town or city for a short time. In order to advertise it fully, a number of empty windows may also be leased and attractive displays of boxed or celled apples set up in each with pictures and descriptions of the orchard. The scheme was used by the Berryville, Va. grower before mentioned. He had displays in many windows in Washington, D. C., and in the Union Station there. In this way, he was able to get rid of his crop several thousand boxes in a few weeks that city at a good price.

Which one of these various methods to use depends upon many factors, the grower himself, the amount of fruit produced in the vicinity, the character and size of the market, the size of the crop, and so on. There can be no hard and fast rule applied for the advertising and sale of this or any other crop. The method used often may vary from year to year even with the same grower.

After all, however, the most sure means of advertising which can be used, no matter what the method of sale, is high quality of fruit. Absolutely the best means of getting the eye and the confidence of the wholesaler, retailer, or consumer is by producing and packing only fruit of the highest quality and doing it year after year. No brand, label, or any other method of advertising amounts to anything unless the fruit is of the best. The important thing for the grower to do first, then, is produce the kind of fruit which the wholesaler, retailer, and consumer wants. Then he can begin to think of the means by which he can market his product.

MANY FRUIT TREES

Nuts are the best of all tree crops because of their high food value, their keeping qualities and the long life of the trees. But there are many other tree crops almost utterly neglected by us. Tropical countries the food of whole nations is largely derived from tree fruits, both for man and animals. The bread fruit, the banana, the avocado, the paw-paw, the carob, the fig are examples. But with our fruits as the American paw-paw, the persimmon, the mulberry, the honey locust, the acorn and beechnut are neglected sources of food, especially for animals. Dr. Smith says that our domesticated animals eat about nine-tenths of our food crops and that we spend a large part of our time waiting on these animals. Why not make our hogs and chickens, for example, wait on themselves by having food crop trees, many of which keep dropping their fruit over a large period of time, under which we can pasture them? In Portugal they entirely fatten their pigs on acorns and some of the Mediterranean islands on chestnuts.

Kindly mention American Fruit Grower when writing to advertisers

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Lazzari stands beside the New Edison and sings
"Mon coeur s'ouvre a ta voix"

Lazzari has now ceased to sing, and the New Edison
is singing the same song alone

THE voice of the decade has appeared. A transcendent artist has flashed into operatic glory.

Twenty-two months ago, Carolina Lazzari joined the Chicago Opera—unknown, unheralded.

Today, three continents clamor to hear her.

This fall the Metropolitan Opera Company brings her to New York City—its new prima donna contralto.

While the spell of her magnificent voice is holding New York opera-goers enthralled, the New Edison will be giving the self-same voice to music-lovers throughout the world.

The pictures on this page are from actual photographs. They show Lazzari in the act of comparing her voice with its RE-CREATION

by the New Edison. She sang. Suddenly she ceased to sing, and the New Edison took up the same song alone. There was *no difference*. It was only by watching Lazzari's lips that the audience could tell when she had ceased to sing.

Lazzari has made this test before more than ten thousand music lovers and representative music critics. This test proves beyond all question that the voice of Lazzari, as RE-CREATED by the New Edison, is absolutely indistinguishable from her voice as heard on the stage of the Metropolitan Opera House.

Generations may pass. The Metropolitan Opera House may fade into memory. But the genius of Edison has perpetuated forever the *real* voices of the world's great artists. Not strident and mechanical travesties on their art—but literal RE-CREATIONS, indistinguishable from their living voices.

NOTE:—Edison not only RE-CREATES the great voices of the world. He also finds them. His method of scientific voice-analysis discovered Lazzari.

The NEW EDISON

"The Phonograph with a Soul"

Our new book, "Edison and Music," is the most interesting phonograph story of the year. Free. Write for it. Thomas A. Edison, Inc., Orange, N. J.



True Value in Hosiery is Measured by the Extra Wear it Gives

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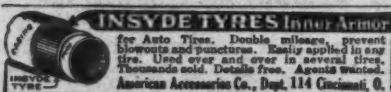
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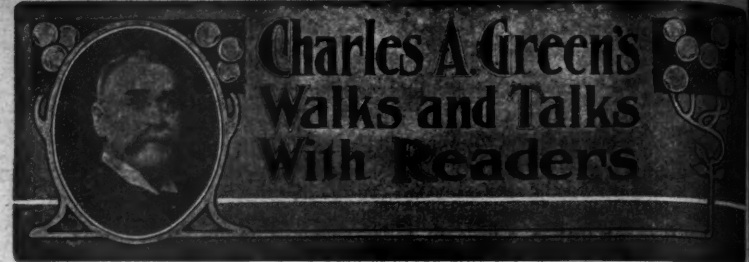
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Charles A. Green's Walks and Talks With Readers

He Wants to Grow Fruit

WILL you kindly give me information concerning the following questions, or advise me as to where I might obtain information about them?

I am a young man who wishes to be a fruit grower and would like to know:

1. Into what kind of fruit growing the best opportunities now lie and in what states.

2. The probable time it would take me to learn enough about fruit farming to start for myself. (Have had two years General Business Education at University of Wisconsin.)

3. The probable wages I would receive while learning.

4. What the probable cost of a farm big enough for a man to make a living.

I realize that these questions are very general, but hope that you understand what I'm driving at. Any information will be highly appreciated.

C. A. Green's Reply: The opportunities for successful fruit growing in this country are so great I could not attempt to specify particularly which localities are the best. The fruit belt of western New York is exceedingly promising for almost all kinds of hardy fruits and the same can be said of Albemarle county, Virginia, and many other localities farther west and farther east.

You will have to depend upon your own faculties for accumulating information as to what you shall plant and where you shall plant it.

One might almost as well ask a lawyer or doctor of experience to specify to a beginner what he should study and what he should do and where he should locate in order to be more successful. Surely no doctor or lawyer could answer such questions satisfactorily. They are the questions that come to all who desire information as to how to succeed in life. Every individual must decide for himself many of these questions and seek for information wherever he can secure it.

The plan to gain experience by working on a fruit farm is desirable, but what wages you could expect I cannot decide, as so much depends upon your adaptability and eagerness for work and for information.

Corsican Strawberry

I am asked by an Ohio lady which is the best method of growing this strawberry. She reports that while her berries are large, the blossoms do not all set fruit and the crop is less than it should be and is poorest where the plants are thickest.

C. A. Green's Reply: The strawberry is more fickle and varies in productiveness more than any other fruit. On some soils it will bear much more fruit than on others, and larger fruit. Where the rows are densely matted you should not expect large crops of fruit. My advice is that you keep the plants in narrow matted rows.

I have some time noticed that all the blossoms do not bear fruit and have never been able to assign a cause unless it is that the blossoms are not all fertilized with pollen by bees or in other ways. I notice the scarcity of honey bees on fruits of late years and urge fruit growers to keep bees, as in my opinion the various crops of fruits are larger where there are plenty of bees to visit the blossoms and fertilize them.

I know of no larger berry than Corsican. It is also of good quality and good color, and the plants are good growers.

How to Build a Cold Storage House

I received the following inquiry: "I am contemplating building an apple storage house above ground. Could you inform me as to how thick the walls would have to be, that is should the filling of protective

space with sawdust be 4, 6 or 8 inches width or thickness, and which would be the safest?

(Signed) E. W. BROWN, Indiana.

C. A. Green's Reply: Since the above is a very important question I have taken pains to get the opinion of a specialist on this subject, who advises me as follows: A cold storage building cannot be made entirely satisfactory with one space filled with sawdust, no matter whether it is 4, 6 or 8 inches in width. He advises that the space, as nearly air tight as possible, filled with dry sawdust, should be 6 inches in width and that in addition to this there should be an air space, that is a space filled with confined air, eight inches in width. The air space should be on the outside and the sawdust space inside of that. The expert who gives me the above advice is one of our largest ice dealers and the information he gives above, while intended to apply to the storage of ice, may so far as I am able to learn, be applied to the protection of fruit. It is best in constructing a house such as has been named that very thorough plans be followed since a little additional expense and a little additional precaution may make all the difference between success and failure.

Personally I have built on my place a cold storage building, the walls of which are mainly composed of hollow tile. There are two air spaces of four inches each, the air is confined air, but this did not entirely keep out the frost in severe winters; therefore I built another air space inside the others and even this did not keep out the frost entirely, which undoubtedly came in through the roof and through the windows. My building is very cool both in summer and winter. My opinion is that it could be made entirely frostproof, and suitable for the storage of apples in warm weather, by having a frostproof roof on it. The doors of such a building as I contemplate should be made similar to the door of a home refrigerator or a refrigerator car. The building should be made so that it can be ventilated.

Farmers' Bulletin 852, issued free by the United States Department of Agriculture, Washington, D. C., gives complete instructions for building "Common Storage Houses for Apples."

Birds vs. Grapes

If you can, kindly tell me how I can keep the birds from eating my grapes when they ripen this summer and fall? I am a great admirer of birds and my place is full of them and I never killed one in my life. The blue jays and the mockingbirds seem to go for them soon as they begin to color up. They are so tame you can hardly scare them away and I would never think of wanting to kill them. What would you suggest doing? You are a fruit man and like myself a lover of birds.

C. H. SHENCK, Tennessee.

C. A. Green's Reply: Your letter introduces a very interesting question. Birds are interesting creatures. They are also remarkably intelligent but they have to learn that white grapes are not green grapes. They have learned that black grapes are good eating but in many localities have not molested the white grapes, considering them green. It took my hens a long time to learn that white grapes were good eating. Now the hens clear the vines unless shut up.

In many places the birds do not disturb the grapes at all. In other localities the birds are far more numerous and far more aggressive and destructive. A friend of mine on the Hudson river used to employ a low salaried man to walk up and down through the vineyards scaring off the birds, knowing of no other remedy except to shoot them, and that was against the law and against his principles, as he also was a bird lover.

Kindly mention American Fruit Grower when writing to advertisers

Fruit

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BROWN, Indiana.

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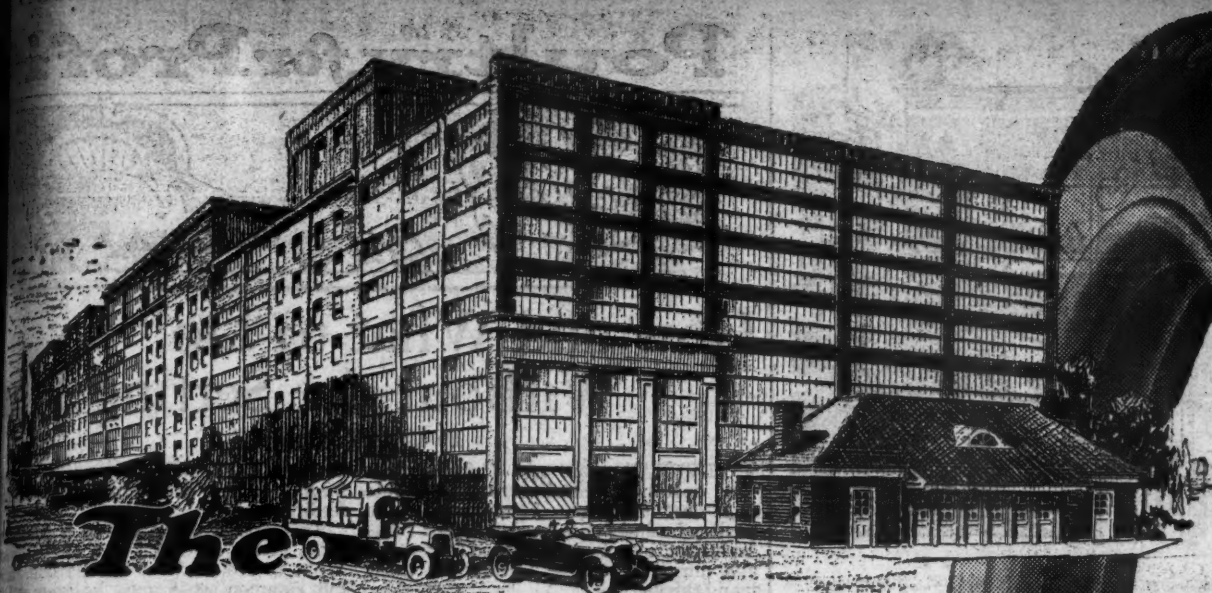
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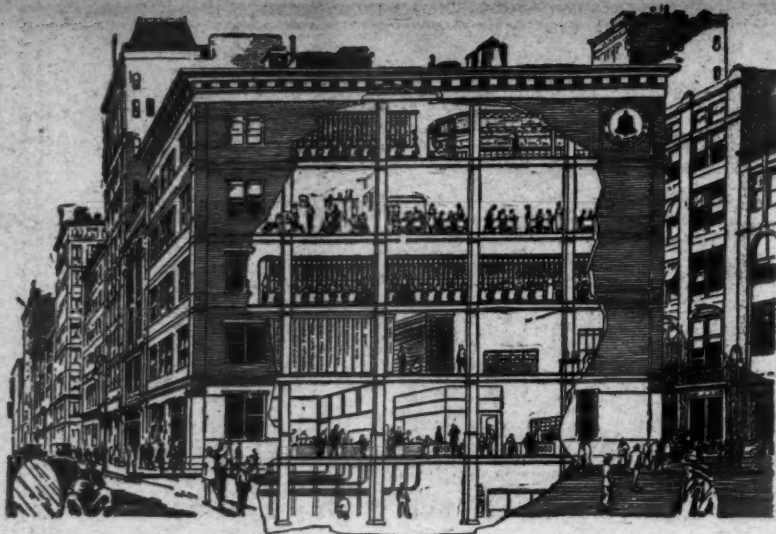
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Telephone construction, including buildings, switchboards, conduits, cables and toll lines, must, from its inherent nature, be undertaken in large units. A metropolitan switchboard, with its tens of thousands of parts, may require from two to three years to construct and install.

Only great extension can meet the

present excess burden of traffic and provide for future requirements. Extension which cares for immediate demand, only, is uneconomical and calls for continuous work of such a character as to be frequently detrimental to the service.

During the war the Bell System devoted all its margin to the needs of the Government. The great task of getting back to normal pre-war excellence of operation requires the reestablishment of an economic operating margin capable of taking care of a larger growth than has ever before confronted the Bell System.

Construction is being pushed to the limit of men and materials; while every effort is being made to provide the best, present service.



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Poultry for Profit



How and What to Do Without the Setting Hen

By E. E. T., Oregon

SEVERAL years ago I owned and operated an incubator and three outdoor brooders. I was not in the poultry business on a large scale but I was experimenting. I experimented four years, and during that time I learned a great many things.

At that time my neighbors looked upon the incubator as a fad, and the curious acted disappointed because I was successful thereby cheating them out of their prophecy of "I told you so."

One thing I learned and have adhered to strictly, and that was not to undertake artificial poultry raising unless I was thoroughly equipped for it. I do not mean expensive houses, or accessories, but comfortable ones, with plenty of runways and tender, green, growing food that the chicks could pick at as they wished, protection from hawks, cats, heat and rain.

Profits and High Prices

When we moved to another state, I was not situated, so I could have all of the above, so I contented myself with the farmers' flock of fifty, and they are paying me 100% profit with feed at the prevailing high price.

Two years ago I realized the need of eliminating the unprofitable boarders, so we killed and ate the roosters, next we began disposing of the heavy eaters, such as the American breed. Now we have nothing but the White Leghorns, and they average five eggs apiece per week, at the present time.

I feed 25% dry mash, 25% mixed grain, and 50% green feed and thick sour milk. My profits are derived from the feeding of the green feed and thick milk.

Raising Day-Old Chicks

Last year as well as this, I resorted to the raising of the day-old chick; anyone can raise fifty with success, without a brooder, by giving a little extra time and care, plus two jugs, or five-pound crisco cans of hot water, refilled morning, evening and the last thing at night.

Put a thick jacket of flannel around the can to hold in the heat, and also prevent the chickens from burning themselves, set this jug or can in a box, a soap or cracker box will do. Put a layer of sand or fine dirt on the bottom, bore very small holes no larger than a dime around the top for air and ventilation, make an opening of about five inches for the chick to run in and out. Close this at night with a covered frame of cloth or screen netting (for air) and cover the box with a blanket or board.

Now set this box in another box having as large a floor space as surrounding accommodations will permit, and keep in an unused room, attic, wood house or porch, for two to three weeks, then the outfit may be placed in an outside building protected from cats, rats, rain, etc., but where the chicks can run on the ground, as this prevents leg weakness.

Feed sparingly of the usual commercial chick feed three times daily, with a fourth feed of either rolled oats, johnny cake or bread crumbs, a daily green feed, and grit, charcoal and fresh water before them at all times.

Keep Chicks Warm

Do not put over twenty-five chicks in one box. As they get larger the jug may be omitted at night with safety, giving them more room, their bodies will keep each other warm, but on cool damp days it will be better to keep the hot water where they can warm themselves to prevent chilling.

Many people believe in feeding butter-milk, sweet or sour milk, but I find it very objectionable on account of fouling the

boxes with the smell of sour milk. I prefer feeding cottage cheese in one of the feedings a day.

This article is written in a condensed form, giving a general idea of "How and What to Do Without the Setting Hen," but common sense must be exercised for satisfactory results.

Building of Brick Roads

Continued from page 16

ments of today are laid on some form of concrete foundation. This will vary in thickness according to the amount of traffic on the street and the kind of soil. The sandier the soil the less thickness is required to prevent damage from frost action.

During the last couple of years there has been a growing sentiment for construction of brick pavements on bituminous foundations. The adherents of this type claim that some of the defects of the brick pavement are caused by the defect in the concrete foundation. They claim that the bituminous base would be more resilient and more flexible in that it would not crack and expand like concrete foundation.

CUSHION—In the past the majority of brick pavements have been laid on what is called a sand cushion, that is, from one to two and one-half inches of sand being placed on the concrete pavement and struck off with a templet and then rolled with a small hand roller. On this cushion the brick is then laid. However, this type of cushion has very largely given way to a good practice to a sand-cement cushion. The sand-cement cushion is made up of one part cement to about four parts of sand. The object of this latter form of cushion is to prevent the sand from moving around and so disturbing the brick surface. A great many of the faults in brick pavements have been due to some movement of the old sand cushion.

Still another form of construction that is very recent is to have no cushion at all, but to do what is called the monolithic type, where the bricks are laid on the concrete foundation before the same has a chance to set.

Some people object to calling sand-cement a cushion. However, it is as much a cushion probably as any of the others, and the name of cushion as applied to cement is really a misnomer.

(CONTINUED IN THE OCTOBER ISSUE.)

Got 117 Eggs Instead of 3

Says One Subscriber

Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." A few cents' worth of "More Eggs" brings amazing results.

During Moulting

your hens will need "More Eggs" to hasten the moult, revitalize their organs and put them in fine laying condition. If you wish to try this great profit maker, write E. J. Reefer, poultry expert, Reefer Bldg., Kansas City, Mo., who will send you prepaid, a season's supply of "More Eggs" Tonic for \$1. A million dollar bank guarantees absolute satisfaction or your dollar returned on request. "More Eggs" costs you nothing. Send a dollar today, or ask Mr. Reefer for his free poultry book that tells the experience of a man who has made a fortune out of poultry.

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We have tried to hold off the increase, but the new conditions which have come, and which have affected each one of us in different ways, have created new problems for this magazine.

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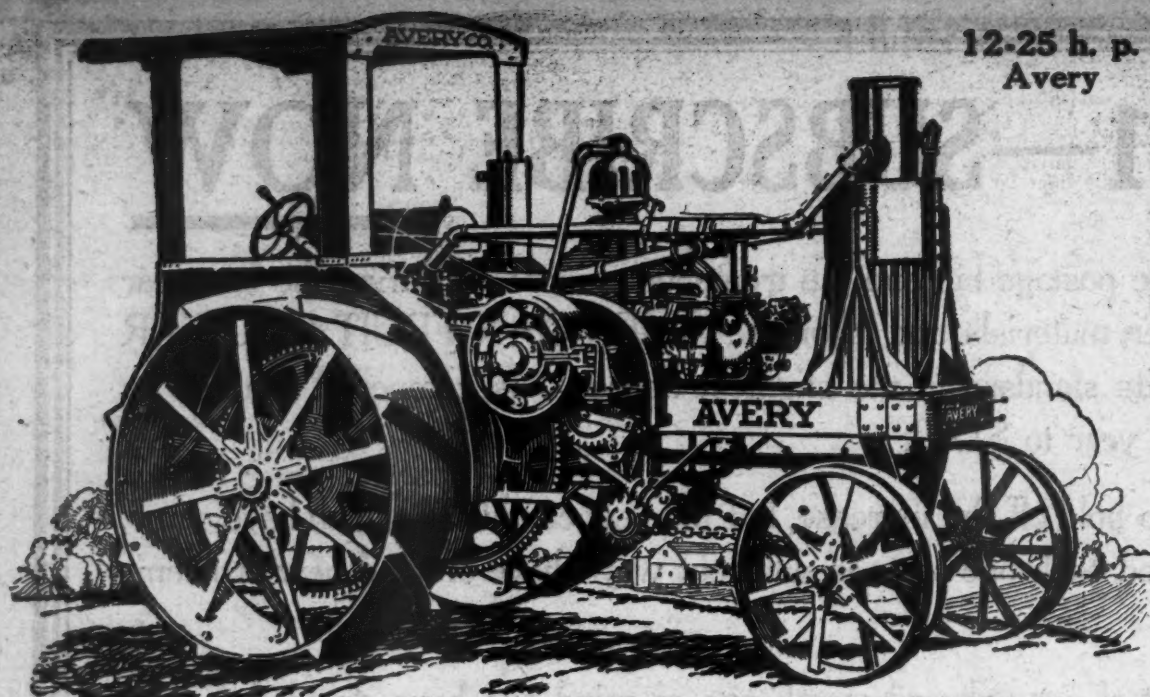
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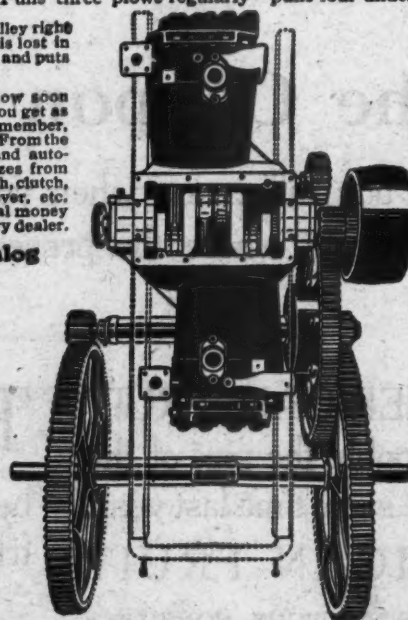
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Has a low speed motor with large belt pulley right on the end of the crankshaft. No power is lost in the belt. Has large contact with the belt and puts all the power of the motor into it.

Here is your answer to the question of how soon to start motor farming. Where else can you get as big a value at a popular price? Remember, Avery Tractors are completely equipped. From the 12-25 H. P. up, a well constructed cab and automatic coupler is regular equipment; all sizes from 8-16 H. P. up have wheel guards, plow hitch, clutch, steel platform, lugs, safety starting lever, etc. You don't have to spend a lot of additional money to equip an Avery. Ask your nearest Avery dealer.

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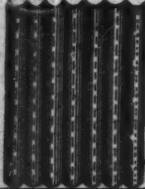
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Rawhide stone-faced Gold Medal Roofing, guaranteed 15 years. Rolls contain 108 sq. ft., nails and cement included. No. TX-305, per roll, \$2.26.

Our Famous Rawhide Rubber Roofing, 3-ply, guaranteed for 12 years; a high grade covering. Rolls contain 108 sq. ft., nails and cement included. No. TX-304, 3-ply, per roll, \$1.83; 2-ply, per roll, \$1.63; 1-ply, per roll, \$1.33.

10,000 rolls of extra heavy high grade roofing; red or gray slate coated, rock-faced, brown pebble coated, double sanded, mineral or mica surfaced. No. TX-306, per roll of 108 sq. ft., nails and cement included, \$1.93.



Corrugated Metal Sheets \$2.00 Per Square

26-gauge painted 2 1/2 in. corrugated, overhauled siding sheets, 5 1/2 ft. long. No. TX-306, per 100 sq. ft., \$2.00.

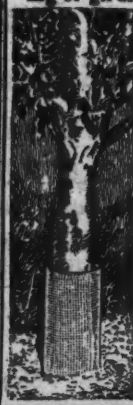
26-gauge painted 2 1/2 in. corrugated, overhauled roofing sheets, No. TX-307, per 100 sq. ft., \$2.75.

24-gauge extra heavy painted, 2 1/2 in. corrugated, overhauled sheets for roofing barns, granaries, etc. No. TX-308, per 100 sq. ft., \$3.50.

HARRIS BROTHERS CO., 35th and Iron Streets, Dept. TX-25, CHICAGO

Protect Your Fruit Trees!

You're liable to heavy loss, unless you prevent rodents from gnawing or girdling the trees.



EXCELSIOR

Wire Mesh Tree Guards

are sure protection from rabbits, mice or other rodents. They harbor no vermin, allow the sun and wind free access to the bark. Heavily galvanized and thoroughly rustproof; easy to set up or remove; strong; cost little and last for years. All sizes.

Write for Catalog P

CLINTON-WRIGHT WIRE CO.
Worcester, Mass.

Making Sweet Cider

By R. W. Rinear, Indiana

As has before been pointed out, the coming of the "National Drouth" means a wonderful increase in the demand for soft drinks. Among the most popular of these will be that friend of our youth, old fashioned apple-cider.

This growing demand has, of course, been seen and appreciated by the operators of the larger cider-making plants who are preparing to reap a part of the harvest of "refreshment money," by enlarging their facilities. Some brewers too have been attracted by the alluring prospect and are making changes in their equipment necessary to make cider.

The turning of the larger makers of cider to this new market, and the devoting of their attention to supplying the demand for sweet cider in the larger centers of population and the consequent neglect of the smaller home markets and the cider vinegar business creates an opportunity for the owner of the small or family size cider press.

Practically every man, woman and child you see is, or would be, a "consumer" of cider.

Big Soft Drink Market

Think of the enormous quantities of those mysterious concoctions called "soft drinks" that are sold annually at soda fountains. Don't you suppose the public gets tired of these peculiar tasting beverages? They do! They long for something real, something they really know about and can drink without fear of ruining their health.

Sweet cider will fill that want.

Each soda fountain, restaurant and every place where soft drinks are sold is a mighty good prospect for the sale of cider. It will take but a few words from the cider maker to convince the proprietor of such an establishment that there is an excellent profit for him in handling cider.

County Fair week offers another opportunity. A small refreshing booth, nicely decorated and with a few neat signs calling attention to cider at five or ten cents a glass will bring in the dollars at a pleasantly surprising rate. This booth can be used again and again, Saturdays and other big days in town.

Pure sweet cider is certainly preferable to the acid lemonade and similar drinks usually sold on such occasions.

Let us not forget cider vinegar.

Cider Vinegar in Demand

The pure food movement and the campaigns conducted by various organizations all over the country during the past few years have taught the housewives, among other things, the superiority of pure cider vinegar. Most of them preferred it anyway and have always been willing to pay a few cents more per gallon for it.

The cider maker should get in touch with his or her grocer or store-keeper right now and tell him how much cider vinegar he will be able to supply. Safe to say the store-keeper will contract for the entire amount. In case he does not want all of it there are always more stores handy and they have a good demand for cider vinegar.

Here are two things to remember. First: People in town, large or small, prefer to buy direct from the producer. Second: The average American has a good amount of false dignity.

Think those things over a while, then pocket your dignity, hitch Dobbin to the spring-wagon, or crank up your car, load on a barrel of cider or vinegar and drive to town. Turn in the first street you come to and stop at every house. No sales ability will be needed. The majority of the people you call on will treat you as though you are doing them a favor by offering to sell them your product. Your barrel will be emptied in no time.

If, after trying the above methods, there is some cider left to be disposed of, boil it down. Get in touch with the many manufacturers of fruit extracts and flavors. They can use all you can supply. Or, call on the bottler, the man who manufactures soft drinks or "Pop," there is one in nearly every town, you will find him glad to purchase a good quantity of cider.

This is the year when the man, or woman, or child for that matter, who owns a "family size" portable cider press reaps a harvest.

From a little work, which will seem more like play, they will realize a big profit.

Kindly mention the American Fruit Grower when writing to advertisers



Make Your Truck Fit the Farm

Don't let your truck remain idle because it does not fit the hauling job you wish to do. Provide a body that will meet every condition—one that's instantly convertible—that's always ready. It puts the truck to a score more of uses than you otherwise could and that means more profit.

EVERYWAY FARMER'S SPECIAL BODY

"The Body for Everything"

Carries all parts with it. No tools required to instantly change it to fit all hauling jobs. Hauls stock, loose grain, vegetables, sacks, fruit crates, baskets, hay—all as efficiently as would a special body built for each purpose.

Write Us

Tell us the make of your truck and name of your dealer. We will send particulars by return mail. No obligation.

The Highland Body Manufacturing Co.
922 Elmwood Place Cincinnati, Ohio



PARKER'S HAIR BALSAM
A toilet preparation of merit. Helps to eradicate dandruff. For Restoring Color and Beauty to Gray and Faded Hair. 50c and \$1.00 at drug stores.

Pecans Profitable

A southern industry that bids fair to rival the apple industry of the north is the growing of pecan trees. Nuts are gaining in favor as a general article of diet and the pecan is a universal favorite. Individual tastes may differ, but just as one man may call the violet his favorite flower—and another may lean to carnations, yet all recognize the supremacy of the rose, so though the walnut and butternut have their devotees, yet the pecan may as safely be called the queen of nuts as the apple is called the king of fruits.

Throughout the southern states the planting of pecan groves increases largely from year to year. Commercial groves are being planted with improved or budded stock, and the acreage spreads rapidly. Georgia leads in the proportion of budded stock with 71 per cent. Alabama, Mississippi, South Carolina, Florida, North Carolina and Louisiana follow in order named. Arkansas has but two per cent of improved trees, and the remaining pecan growing states—Kentucky, Texas, Oklahoma, Indiana, Illinois and Missouri have less than one per cent of improved stock. Georgia alone, has between 75,000 and 100,000 acres of budded trees (not all in bearing) yet it is probable that up to this time Texas ships more nuts annually than Georgia.

Mexico has heretofore shipped many carloads of pecans into the states, and more than one firm has located on the border with the avowed intention of handling this trade. This year, however, storms have so damaged the Mexican crop that the output will be 50 per cent less than expected. Hail, high winds and early frosts must all be reckoned with when crop predictions are made.

Where Pecans Thrive

It seems strange that though the original native pecans are all found growing along stream sides, in bottom lands and beside bayous, yet the ideal soil for the budded stock is to be found in cut-over pine lands where there is a light sandy loam. Only in comparatively recent years has the pecan industry been placed on a commercial level equal with the fruits, by growing improved stock in a scientific manner.

Fortunately the pecan has but one serious enemy—the caterpillar. As these insects gather together in large webs, they are easily removed. A controlling spray is used upon another pest, an insect something like the boll weevil, which stings the green nuts. This trouble is, so far, confined to limited areas.

Probably owing to the general knowledge of the very long life of this tree, it is a popular impression that pecans take a great time to come into bearing. This is not true, for pecans begin to bear six or seven years after being planted and budded, and crops grow larger each year until full maturity is reached. The average life of a pecan is said to be 100 years, so there is little chance of the grandchildren of the planter being disappointed in their later years of a healthy and abundantly bearing grove.

The Pecan Spreads Wide

A pecan grove should be set 60 to 80 feet apart in order to allow the trees to attain their full development. Some commercial groves have been set too close with the result that the trees have spindled up to a great height. This makes harvesting extremely difficult and such trees do not bear the largest crops, for the yield is heaviest upon widespread branches.

Harvesting used to be conducted by clubbing the trees in order to jar off the nuts. This was found to bruise the branches and resulted in a diminished yield the next year. Today the nuts are threshed down by long slender bamboo poles. The thresher goes before and switches down the nuts, the pickers follow after and gather the fallen nuts from the ground.

Many pecan nuts are kept from season to season and in order that they may not acquire a stale, strong taste, they must be put into cold storage. A single buyer has been known to have as many as 1,000,000 pounds of nuts in cold storage at one time. Nothing tells more plainly the commercial value of this nut than the fact that often \$1,000 per acre is refused for a bearing grove. So long as this standard of values is maintained we may look for an ever increasing acreage of pecans.



Victrola XVII, \$275
Victrola XVII, electric, \$332.50
Mahogany or oak

Other styles of the Victor and Victrola \$12 to \$950

Every one of these Victor artists is a reason for having a Victrola

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|---------|----------|-------------|------------|----------------|------------|
| ALBA | CULP | GALLI-CURCI | JOURNET | MURPHY | SCOTT |
| BONI | DEGROSSA | GARRISON | KREISLER | PADEREWSKI | SEMERICH |
| BRASLAU | DELUGA | GILLY | KUBELIN | PATTI | TETRAZZINI |
| CALVE | DESTIN | GLUCK | MARTINELLI | POWELL | WERNER |
| CARUSO | EAMES | HAMLIN | MOSCONI | RUFFO | WHITENELL |
| CLEMENT | ELMAN | HEIFETZ | MELBA | SANMARGO | WITHERSPON |
| CHOTY | FARRAR | HOMER | | SCHUMANN-HEINE | ZIMBALIST |

It is to these artists the public instinctively turns for musical entertainment in the great opera houses, theatres and concert auditoriums throughout the world. And on the Victrola their glorious art echoes and re-echoes in thousands upon thousands of homes.

To hear these famous artists on the Victrola is to be thrilled and inspired by their exquisite interpretations, to experience the delight that only the greatest music can bestow—that only Victor Records bring into your home. Every rendition as true as life itself—and it is in acknowledgment of this perfection that these great artists have chosen the Victrola as the instrument to convey their masterpieces to the music-lovers of all the world.

Any Victor dealer anywhere will gladly demonstrate the Victrola and play any music you wish to hear. Write to us for catalogs, and name of nearest dealer.

Victor Talking Machine Co., Camden, N. J.

Important Notice. Victor Records and Victor Machines are scientifically coordinated and synchronized in the processes of manufacture, and should be used together to secure a perfect reproduction.

"Victrola" is the Registered Trademark of the Victor Talking Machine Company designating the products of this Company only.



Eagle Lye -and water



—every home which uses Eagle Lye is a clean home; Eagle Lye, being a concentrated Cleaner, may be mixed with water. In this manner it is far more Economical than cleansers which require rubbing. Try some. Your grocer sells it: 15 cents.

THE SELF-OILING WINDMILL

has become so popular in its first four years that thousands have been called for to replace, on their old towers, other makes of mills, and to replace, at small cost, the gearing of the earlier Aeromotors, making them self-oiling. Its enclosed motor keeps in the oil and keeps out dust and rain. The Splash Oiling System constantly floods every bearing with oil, preventing wear and enabling the mill to pump in the lightest breeze. The oil supply is renewed once a year. Double Gears are used, each carrying half the load. We make Gasoline Engines, Pumps, Tanks, Water Supply Goods and Steel Frame Saws. Write AEROMOTOR CO., 2500 Twelfth St., Chicago



Mount Gilead CIDER PRESSES

draw the Business making Big Money with M-G Cider Presses. Quick, clean profits with little labor and expense. Demand for cider is far greater than ever. Now is the time to install the reliable Mount Gilead Hydraulic Cider Press. Standard for 42 years. Largest juice yield. Easy to operate. Fully guaranteed. Sizes from 10 to 400 bbls. daily. Complete outfit ready to ship. Big Free Cider Mill Catalog given full details with lowest factory prices. Write today. HYDRAULIC PRESS MFG. CO. 106 Lincoln Ave., Mount Gilead, Ohio Also Jager Refrigerators, Freezers, Vacuum Cleaners, etc.

WE WANT ALL KINDS OF FURS

FOX, BEAR, BEAVER, LYNX, WILDCAT, MUSKRAT, MARTEN, MINK, ETC. WE'LL PAY THE MOST

Remits Quickest. Pays Cash. If you have furs, write to us. We'll send you a list of prices. If you want to sell, we'll send you a list of prices. If you want to sell, we'll send you a list of prices. If you want to sell, we'll send you a list of prices.

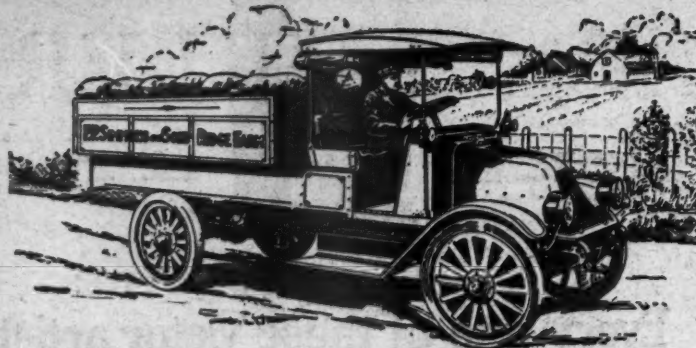
25 Cords a Day

Easily Sawn By One Man. Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

OTTAWA LOG SAW

Does 10 men's work at one-tenth the cost. Makes work easy. Engine can also be used for running pumps and other machinery. Saw blades easily removed. Write for our low prices. 10-Year Guarantee. Ottawa Log Saw Co. 1531 Wood St. Ottawa, Kansas.

30-Day Trial. Kindly mention American Fruit Grower when writing to advertisers



You Wouldn't Make Three Trips

to town to haul farm produce that you could easily handle in one load—it would be a needless and expensive waste of time.

And yet—you haul your crops to the elevator with your team and wagon although it takes more than three times the length of time that would be required with a motor truck—time, two-thirds of which you might just as well employ to good advantage doing your fall work.

According to the United States Department of Agriculture, the cost of hauling wheat or corn by motor truck is just one-half that of horse and wagon hauling.

International Motor Trucks are especially designed to meet farm and country road conditions. The chassis and artillery type wheels are of very sturdy construction as are the engine, clutch, transmission, rear axle—all designed, built and tested to provide low-cost hauling under the trying conditions usually encountered in farm hauling. And, moreover, **International** trucks have behind them the same repair service, handled through our eighty-eight branch houses, that you get on McCormick, Deering and other International machines.

Let us send you a catalogue descriptive of **International Motor Trucks** and tell you where you can see one of these trucks near you.

INTERNATIONAL HARVESTER COMPANY

CHICAGO OF AMERICA INC. USA

The International Line

Grain Harvesting Machines

Binders Push Binders
Headers Rice Binders
Harvester-Threshers Reapers
Shockers Threshers

Tillage Implements

Tractor Plows Riding Plows
Walking Plows
Disk Harrows
Tractor Harrows
Spring-Tooth Harrows
Peg-Tooth Harrows
Orchard Harrows Cultivators
Culti-Packers

Planting and Seeding Machines

Corn Planters Corn Drills
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Grain Drills Broadcast Seeders
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Mowers Side-Delivery Rakes
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Power Machines

Tractors Engines
Motor Trucks
Motor Cultivators

Corn Machines

Planters Motor Cultivators
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Beet Tools

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Other Farm Equipment

Cream Separators
Manure Spreaders
Straw Spreading Attachment
Farm Wagons Stalk Cutters
Farm Trucks Knife Grinders
Tractor Hitches Binder Twine

National Tractor Demonstration

By Wm. Aitkenhead, Purdue University

Ninety-three tractors ready to go, everyone speaking its own dialect from the vibrant chug-chug of the 350 revolution per minute two lungers to the dizzy, whirring high speed fours, made the demonstration field at Wichita, Kansas, a summation of achievement. Really human limitations of endurance aided by a strong minded high powered Kansas sun prevented the visitors from comprehending the magnitude of the affair.

For the brief demonstration week the field adjoining Tyler Station, six miles from Wichita, was transformed into a tented city with water works, sanitary department, telephones, a telegraph system, and light and heat. The latter was the least costly utility. Some of the exhibits even beautified their temporary city with flower beds and private deer parks. Meanwhile the tractors have been chugging from the towering, mountainous 40-50 with its sixteen disk plows to the truly garden size which could be run through the back door and stored under the kitchen table, if necessary. To these tractors were hitched the Alphas clear through to the Omegas of tillage tools. There were manure spreaders, plows, disks, packers, harrows, grain drills, more packers, binders, threshers, and lastly the rubber tired tractor with the string of wagons ready to make the expeditious trip to the elevator. By-the-way it is a good idea to make the manure spreader the Alpha of the tools.

Our gratitude and respect must be given to the talented, patient, laborious men who have perfected the tractor plow. The Wichita demonstration must have quickened their hearts for the fruition of their efforts appeared in the level, well pulverized, clean surfaced ground. It was good to hear the work admired by the farmers. The use of weed wires attached to the cutters was most effective in burying all the weeds and stubble. While some of the work was notably good the quality of the plowing done was generally high. Due to the greater experience of the operators the finishing of the lands excelled that of the earlier demonstrations. The first day 100 acres were plowed in one and half hours. At a reasonable figure of two and three quarter gallons per acre, this would mean about nine drums of fuel, weighing less than two tons. Even tractor skeptics must credit our steel muscled, fire breathing creation with giving big returns in power from energy stored in small bulk.

One Man Control

That nothing stimulates like good competition was proven by the one man control outfits which have been lately developed. Wagons driven from the seat, mowers, and binders under one man control were wheeling, turning, and evolving everywhere.

The new member of the family, the power cultivator was being shown with pride, and a versatile infant it is. With the cultivator gangs removed it could handle mowers, wagons, and sprayers, in fact it is a single team displacer. Steering from the shovel gangs was a new feature. By means of rods attached to a crank the steering wheel in front moved in unison with the gangs so the cultivator could be steered entirely by watching the shovels. A machine so equipped was brought right from the corn field to the show. Ponder this fact: Heretofore we have heard, "Well I'll have to keep horses anyway to do the cultivating." The motor cultivator slips in the keystone of power farming and should make not more than four head of horses necessary on a farm of two or three hundred acres.

"Nothing to hide" seemed to be the prevailing motto of the whole demonstration. Everywhere there were cutaway models driven so the moving parts could be seen. The gear shifts were uncovered, showing how the speed changes were effected. The dark corners were lighted by electric lights and the friendly man with the order book in his pocket was there with his captivating "are you interested?"

The three plow was consistently the favorite size. Most farmers feel that when considered from the labor standpoint, the two plow machine is still the region of horse drawn implements, but with three plows there is an evident saving of man power. The desire for belt power sufficient to run a medium sized ensilage cutter,

Here's An Opportunity For YOU

If you are dissatisfied with your present connection or are looking for a bigger opportunity, write and let us know.

We have a very attractive proposition for those who can devote a large part or all their time soliciting subscriptions for the American Fruit Grower.

You can easily make \$50.00 a week on this proposition, and if you demonstrate your ability to secure a large number of subscriptions, there is an opportunity of appointment as District Manager with the possibility of an income of \$100.00 to \$150.00 and more a week.

This is a real opportunity, so it will pay you to investigate.

Write to
AMERICAN FRUIT GROWER
CHICAGO


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different Type Shown
A good many machines of the rigid type were shown. Here the engine base and the gear case are the frame of the tractor. It will take a year or two of actual service to show whether or not such an assembly is satisfactory in the hands of the average man, as trouble in the gear case would likely mean complete dissembling of the machine to replace the defective part. Freedom to remove any piece without dis-

Peaches Given Away
The AMERICAN FRUIT GROWER also gave a demonstration, and as was aptly said, "It's a Peach." Each day during the demonstration we distributed thousands of peaches to the



Did You Get Yours?

This Big Juicy Peach is waiting for you at the Booth of the

AMERICAN FRUIT GROWER

Peaches Were Distributed Free by the American Fruit Grower

exhibitors and visitors who advertised the peaches by wearing the tag that is reproduced above.

turbance of other parts is a prime requisite in a farm tractor as nautically speaking a farmer does not like to put his tractor in the dry dock and waste several valuable days while the machine is torn apart to replace a new gear or bearing.

This is true in the end the buyer gets what he demands. Designers and manufacturers may experiment on him and tempt him with all sorts of novelties, but that stage seems past, for freakish designers were notably absent at Wichita.

Self Starters Needed

The accessories' tent had very meritorious displays, especially concerning ignition and lubrication. The evident efforts of the magneto men to produce a sure starter will be prayerfully seconded by those who have cranked a dead cold tractor on a raw, windy spring morning. Nearly every oil company had a space in the tent. Of course, they were after business, but if they made tractor owners think of good oils and greases well applied, their's was a worthy mission. By the way it was interesting to see the expert operators oil up for the daily plowing demonstrations. There was no inclination to skimp the job.

That farmers interested in tractors are classified as progressive possibly accounts for the number of farm lighting plants on exhibition. An electric light plant is supposed to top off modern conveniences in the farm home. Experience seems to demand batteries of larger capacity than the 80 ampere hour kind supplied with the earlier plants. The ones shown were mostly of 160 ampere capacity.

Engine builders were there with specially designed tractor motors. Since the de-

AN OPEN LETTER

to those who have not secured immediate delivery of their new 1920 Haynes cars

By A. G. SEIBERLING, Vice-President and General Manager
The Haynes Automobile Company, Kokomo, Ind., U. S. A.

IT is a matter of great regret to us that thousands of people have been unable to get immediate delivery of the new 1920 Haynes. The fact that we have succeeded in increasing production to the point where we may soon be on a greater delivery basis is encouraging to us. But we feel that an explanation is due all of the good friends of the Haynes who have waited so patiently and so expectantly for their cars.

During the war our plant was converted into one to serve our government. Our engineers and designers went ahead with their work and produced the new 1920 Haynes. Its tremendous appeal at the opening of the year is a matter of history, and orders continued to come from all parts of this country as well as from abroad.

Our dealers have done their best to take care of their patrons. We realize, however, that even when the situation was understood everyone who ordered a new Haynes was more and more anxious to receive it.

We could not "rush" production. Even had it been mechanically possible there remained the fact that no Haynes is allowed to leave our plant until it has satisfied the rigid inspection tests of our engineers and designers.

Each Haynes car must exemplify the four essential factors of character—beauty, strength, power and comfort—before it can go to its future owner. This extra care on our part is a tangible benefit to the owner, but we know how anybody feels about it when he has ordered a fine new car and cannot get it.

But the orders continue to come in. The new 1920 Haynes is actually an advance model. It is what, in ordinary times, would have been expected of this organization next January. Naturally, every time one is driven from a Haynes dealer's establishment it awak-

ens in the mind of every beholder the desire to own one. Thus the orders show no indication of abatement.

We are doubling the capacity of our plant; we have increased our production. Those who have waited have profited, because they are getting Haynes cars which are wonderfully improved.

The new 1920 Haynes, therefore, is a car worth waiting a little while for. Whether it is the seven-passenger touring car, the four-door, four-passenger roadster, the seven-passenger limousine, the seven-passenger sedan or the four-passenger coupe, we know that it comes fully up to the Haynes standard of a car of character.

Our earnest recommendation is that you place your reservation with your Haynes dealer now. You may have to wait a short time before receiving your car, but the value of your investment will more than offset the slight delay.

We have promised your dealer to do our best to fill his orders with the least possible loss of time, and that every car we send him shall measure fully up to the standards created and perfected by the Haynes organization in all the twenty-six years since Elwood Haynes thrilled this country with his invention—America's First Car.

A. G. Seiberling

The Haynes, AMERICA'S FIRST CAR, now exhibited by the government at the Smithsonian Institution, Washington, D. C., was invented, designed and built by Elwood Haynes, in 1893.

1893—THE HAYNES IS AMERICA'S FIRST CAR—1919

mand for motors for war purposes is over, attention is being focused on tractor requirements. The most radical design was by an Indianapolis firm where a 4½-inch by 6-inch motor had a 3-inch crank shaft. This they explained when combined with forced lubrication would make adjustment of the connecting rods a very infrequent occurrence.

Transmission machinery as gears, sprockets, chains, ball and roller bearings on exhibition showed that the tractor industry now commands the products of America's most reliable manufacturers.

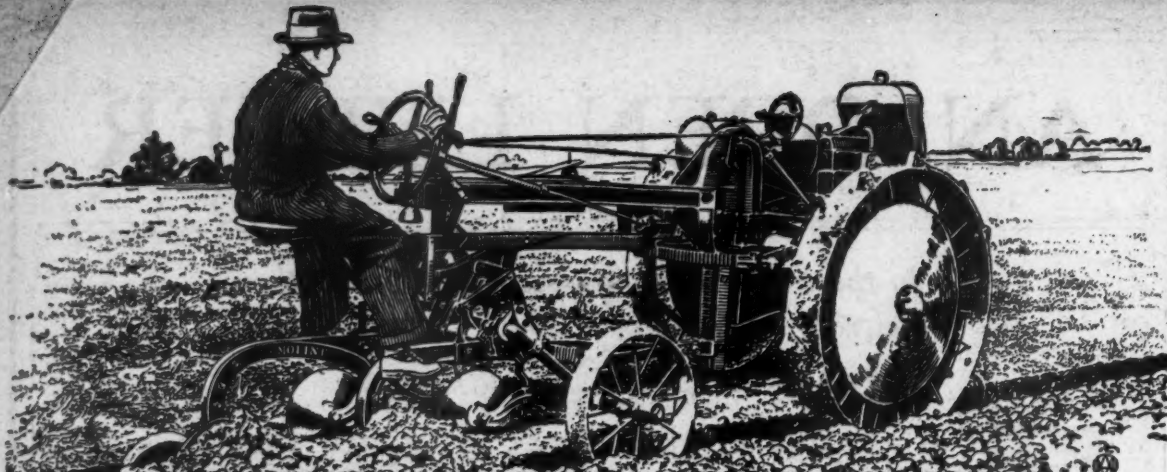
One tractor that had been "oil pulling" for ten years was on hand and still going as in its youth. Another was so young that the incline to the ground floor was yet open and the promoter's pencil still sharp.

One could not help being proud of the American disposition as shown in the orderly, good natured crowds. A mental comparison with sight-seeing crowds in older and "wetter" lands made one glad to claim U. S. as their home.

Two-room cottages, as well as community houses which boast ample kitchens

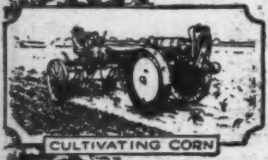
and accommodation for 20 persons, have been built for berry pickers in northwestern Washington. The fastest pickers of the cultivated berries were sent out with tents and equipment to rifle the hedgerows. Pickers who remained the entire season in the berry fields were given a bonus.

That Minnesota can grow its own tree fruits, is maintained by K. A. Kirkpatrick in special bulletin No. 40, "The Minnesota Orchard." A copy of this bulletin can be obtained from the Office of Publications, University Farm, St. Paul, Minn.



MOLINE

System of Power Farming



You buy a tractor to make money. The more money a tractor or implement will make for you the more you are willing to pay for it.

Consider then what a tractor will make for you in dollars and cents—how much man power it saves, how many horses it displaces, and the more and better work it will do. That is the way to buy a tractor—the purchase price alone should not influence you.

When you buy a Moline-Universal Tractor you get one of the finest power plants on wheels. You get a completely equipped tractor, with self starter, electric governor, electric lights, belt pulley, power lift gang plow—everything you need.

You not only buy a quality tractor, but a complete system of power farming. The Moline-Universal enables you to do all farm work including cultivating. One man operates both tractor and implement from the seat of the implement.

Actual figures from over 200 farms in 37 states show that the Moline System of Power farming saves an average of 1½ men and 5 horses per farm.

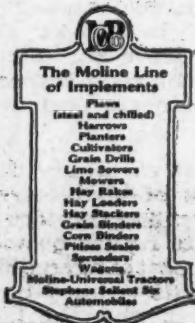


Figure what such a saving will mean to you. Considered from this point of view the Moline-Universal is the lowest priced tractor made. Thousands of farmers are proving this every day. Write us today for full information. It's free on request.

Moline Plow Company, Moline, Ill.

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Like to Make \$2.00 An Hour?

That is the salary Mr. and Mrs. Louis Chases, of Little Rock, Ark., both earn soliciting subscriptions for the American Fruit Grower, and if you are not making as much and can devote all or a large part of your time to soliciting subscriptions for the American Fruit Grower we will gladly give you full particulars as to how you, too, can earn such an attractive salary.

Mr. and Mrs. Chases have had splendid success soliciting subscriptions for the American Fruit Grower and we are proud of the record they have made, but there is no reason in the world why you cannot equal or better their success.

Tell us that you are in earnest and we will give you the opportunity.

Write to
AMERICAN FRUIT GROWER
CHICAGO

Write for Facts About Nuts

Questions about nut growing will be gladly answered in these columns, or by a personal letter if a two-cent stamp is enclosed with the enquiry. Address Dr. W. C. Deming, American Fruit Grower, Chicago.

JUDGING by the number of requests for the circular on grafting nut trees there must be a considerable number of readers of these articles. Have you not problems in nut growing, trees that do not bear as you think they should, pests that bother them, doubts about varieties to plant, hesitation about beginning and other questions that you would like cleared up? If so the writer of these columns will be glad to answer them to the best of his ability either in the AMERICAN FRUIT GROWER, if they are of general interest, or by letter if a two-cent stamp is enclosed. Or perhaps you have suggestions as to making these articles more interesting and helpful. These suggestions will also be welcome.

Characteristics of Valuable Nuts

Before taking up the description of the different varieties of nuts it will be helpful to consider what characteristics make nuts valuable. In conducting the nut contests of the Northern Nut Growers' Association it has been found that people often attach too much importance to a single remarkable characteristic, especially to large size. Even nuts conspicuous only because of very thick husks are often sent in.

The real value of any variety of nut is determined by two sets of qualities, those of the tree and those of the nut itself, just as in the case of any other fruit.

Tree Characteristics

First of all any nut, or fruit, tree should be prolific, bear fruit, deliver the goods. A shy bearer, even though it bear a very fine fruit, is generally inferior, commercially, to the tree that produces large quantities of a good grade of fruit. It need not be an annual bearer, very few trees produce large crops annually, but it must produce paying crops of nuts at least every other year. Of course shy bearing trees, though of little value commercially, may be good for home use or for breeding purposes.

Age of Bearing

It is quite desirable that a tree should be an early bearer. Many nut trees grown from seed do not come to bearing before they are fifteen or twenty years old, or even older, but all grafted trees may be expected to come into bearing much earlier than that, about as soon as grafted apple trees as a rule, though there seems to be considerable variation.

Hardiness of Trees

A nut tree should be hardy in the region where it is intended to be grown. The southern pecan is too tender for the north, usually, and those varieties that may survive the climate find the growing season too short to mature their nuts. The soft shelled almond is likewise too tender and blooms so early that the fruit may rarely be expected to set. We need someone to experiment for the production of a hardy soft shelled almond. Many seedling trees of the English walnut are subject to winter killing, especially of the terminal branches.

Ornamental Nut Trees

Nut trees may be valuable for ornamental qualities, irrespective of the nuts they bear. There is a beautiful cut leaved English walnut which also bears good nuts. A nut tree with a particularly handsome habit of growth, such as weeping branches, variegated or purple foliage, like the purple hazel, or the almost tropical foliage of some of the Japanese walnuts, may be valuable for these characteristics alone. The almond is worth growing simply for its beautiful blossoms.

Nut Trees for Timber

Some of our most valuable timber is furnished by nut trees and in time they must be specially planted for this purpose. Circassian walnut, used for its beautiful grain, is simply the wood of the English walnut from selected specimens. The wood of the black walnut is a little out of fashion for ornamental use, though it may come back at any time, but is always in demand for gun stocks, airplane propellers and the like. Some day specially selected strains of the English and the black walnut and

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the white walnut, or butternut, will be grown as grafted trees for the wood for cabinet making and veneers. Some hybrid nut trees grow with extreme rapidity, like the Paradox walnut, and should prove useful for growing timber.

Nut Characteristics

First as to size. With some nuts this is a prime requisite. For example our native hazel, though often thin shelled, easily cracked and of good quality is almost always too small to be of any commercial value. No native hazel has yet been brought to notice that is big enough to warrant commercial propagation. On the other hand some specimens of the black walnut and of the big shellbark, *carya bicolor*, are huge enough to contain half a meal of kernel but are so thick shelled, hard to crack and to get out the kernel that they are commercially valueless. Chickapins and many wild chestnuts, though of the highest quality and easiest shelling, are too small to be of value. Many wild pecans and shagbark hickory nuts are valueless on account of small size, though there are some small shagbarks that are so thin shelled, plump and sweet kernalled that they may prove marketable as dessert nuts to be cracked at the table with a hand cracker.

So it is quite evident that large size alone is not sufficient to make a nut valuable, and yet too small size may render an otherwise good nut of no, or very limited, value.

Attractiveness of Nuts

To most things we are attracted first by the eye. A rich or pure color, symmetry and uniformity makes us draw near. We cannot blame the public for shying at a basket of weather stained hickory nuts, all sizes and shapes mixed together, and buying from the basket filled with big, white, clean nuts all of the same size and shape. In that way it is that the west has beaten out the east in marketing its fruits. We talk about educating the public to buy for quality rather than looks, but the purchasing public is constantly being renewed from the uneducated, and the educated only in small degree hand down their education. Therefore it is for us producers to see to it that, so far as possible, the best quality goes under the best appearance.

Thickness of Shell

The chestnut, of course, never has a thick shell but all our other native nuts vary extremely in this respect. A thick shell usually means hard cracking and large proportion of shell to kernel. This is a bad handicap for any nut. The ideal shell is one that can be easily cracked at the table with a hand cracker. Of course this is not absolutely essential, except for the higher quality, higher priced dessert nuts, but a nut has got to have a lot of mighty good other qualities, if it is to be profitable, when it takes a sledge hammer to crack it.

Proportion of Shell to Kernel

This is closely connected with thickness of shell. The Triplett shagbark hickory is not a large nut but it has so thin a shell and so plump a kernel that kernel and shell have just about an equal weight. Now if you had a good many bushels of the Triplett hickory nut, and each bushel of uncracked nuts weighed sixty pounds and would shell out any where near thirty pounds of kernels, with such kernels bringing considerably over a dollar a pound, you would be likely to shake hands with yourself. The Thomas black walnut shells out about ten pounds of meats to the bushel, and some other varieties do much better than that, and Mr. E. A. Riehl says that he cannot supply the demand at eighty cents a pound.

Good Cleavage Necessary

Good cleavage means that the nut breaks when cracked so that the kernel may be easily taken out whole or in unbroken halves. Of what use is a nut that has to have its kernel picked out in little pieces with a nut pick compared with one that sheds its meat in unbroken halves when cracked? Such good cleavage is absolutely essential for a nut that is to be used for cracking by machinery for the sale of the meats alone, which is now a large and increasing industry. The black walnut is notoriously hard to crack with good results and it is one of the chief merits of the Stabler black walnut that a very large proportion of them give up unbroken whole or half kernels.

NEW

Mitchell
SIXES

Our Victory Model

A TWO-YEAR REVISION—OVER 100 IMPROVEMENTS

After 16 Years

This new Mitchell Six comes out in our 16th year of car building.

We have built and watched tens of thousands of Light Sixes. They have given the Mitchell a world-wide fame.

Now our engineers and specialists have worked two years on this new model, to embody all we have learned. There are more than 100 important improvements, based on vast experience.

You should measure up these new-day standards before you buy a fine car now.

Lasting Newness

The object of this new Six is to give you lasting newness.

Most cars satisfy when new. In this new Mitchell that newness will endure.

Part by part we have added strength. We are using better materials, new heat treatments, 123 drop forgings.

New and radical tests are now applied to every vital part. Inspection is carried to extremes.

Reducing Wear

There is finer workmanship. We have spent over \$300,000 on new machinery and equipment to attain this.

There is utter smoothness in the motor, less waste of power. The crankshafts are twice balanced on two new-type machines.

Gears are perfectly mated. Transmissions are tested in a sound-proof room. Engines are tested, and for hours, with electric dynamometers.

The bodies are extra-staunch. The top will stay new. The luster of the finish is enduring. The rear springs have been proved unbreakable.

A thermosat on the motor controls temperature. The gasoline is perfectly vaporized. Thus we cut down fuel cost.

These things mean much to owners. They mean less wear, less upkeep, less operating cost. And they mean much extra service.

Learn the Facts

Ask for our catalog and learn all the improvements, or see our nearest dealer. These are qualities every car owner wants. Now so many know them that Mitchell sales are breaking all our records.

A Six like this at the Mitchell price is due to our factory efficiency. We build the complete car—motor, chassis and body—under scientific cost-reducing methods. This model plant has long been famous for them.

When you know the facts this car will be your first choice in this class. Write us today.

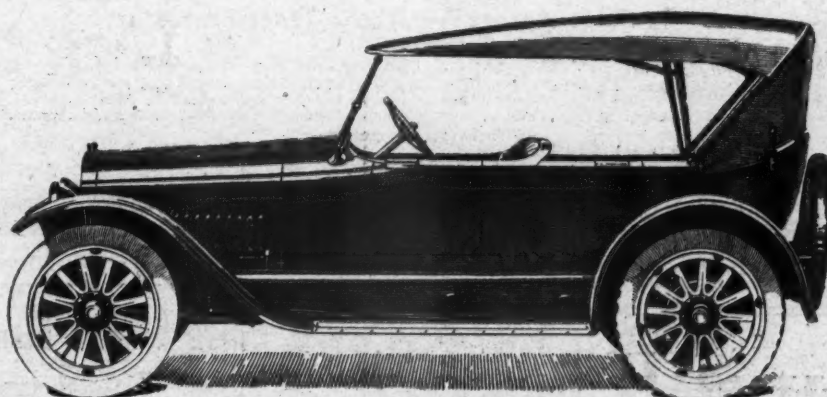
5-Passenger Touring Car
\$1690 f. o. b. Factory

120-In. Wheelbase—40 h. p. Motor
3-Passenger Roadster, same price
Also built as Sedan and Coupe

7-Passenger Touring Car
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127-In. Wheelbase—48 h. p. Motor

MITCHELL MOTORS COMPANY, Inc.
Racine, Wisconsin



Quality of Meat

Though put last this is not the least of the requirements for a valuable nut. A nut must be good to eat. A tough, dry, shrunken, flavorless kernel may be bought once, if the outside of the nut looks good, but the same customer is not likely to hurry back for another lot. It is the comebacks that will count when the public is educated to really good nuts. A nut kernel should be plump and filled to the tip, of attractive color, free from woody or astringent pellicle, tender, sweet, crisp, oily, in those nuts that are naturally oily, and have a distinct and pleasant flavor. A good butternut kernel, for example, fills all these requirements while the kernel of the Japanese walnuts, which otherwise much resembles that of the butternut, as a rule lacks flavor and is rather insipid. I know that the American public buys many things largely on looks but it will become educated in time and when you are planting such long lived things as nut trees it is better to plant those that will stand the

test of time. The southern pecan growers are already finding this out to their cost and are no longer planting the big, poor filling, flavor lacking nuts. Let us make up our minds to make quality one of the prime requisites for nuts to be planted either for home use or for commercial purposes.

Summary of Desirable Qualities

Nut trees, as nut producers, should be, as an ideal, prolific, strong growing, healthy, early bearing and hardy. They may also be grown as ornamentals, as shade givers and for timber.

Nuts themselves should be of good size for the variety, attractive in form and color, easily cracked and the kernel easily extracted and of high quality.

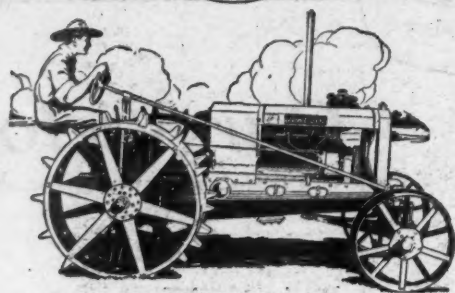
CALIFORNIA FRUIT CROP

It is estimated that the apple orchards of California alone, will this season produce something like seven and one-half millions of bushels of fruit. Her peach production is well over a quarter (some say over two-

thirds) of the entire crop of the United States. Prunes will break the record with something like 120,000 tons. Apricots, pears and oranges, while not bumper crops, will total many hundreds of tons. Lemons are expected to supply the summer demand for lemonade, and that demand is tremendous. Almonds and walnuts, largely on account of new bearing areas, will be a bigger crop than ever before. Grapes, both table and wine grapes, have immense prospects. 200,000 tons is considered a most conservative estimate upon the production this year.

NO MORE WHOLE NUTS

With a view to reducing the expenses of packing, freighting and handling, the State Walnut Growers' Association of California has placed large orders for a new nut meat container which is said to preserve the meats fresh and sweet indefinitely. The Growers predict that whole nuts will, within a short time, no longer be handled.



The Wallis is Your Logical Tractor Investment

STRICTLY on the score of its outstanding mechanical supremacy, you should select the Wallis. Developed by twelve years of successful service on thousands of orchards, America's Foremost Tractor has earned a performance record beyond compare.

This compact unit of power has proven its ability to do more work for a greater number of years. Over a period of years, the Wallis shows most acres plowed per dollar invested.

It is simple of design and substantially built. It is lasting and durable. It is light weight and easily handled. It possesses proven features of construction that make it the greatest of all tractors.

Its moderate size, ease of handling, and short turning radius make it especially adapted to orchard work. One of the largest pear orchards in the world has used a fleet of Wallis Tractors for years with uncommon success.

These Wallis Superiorities Mean More Profits to You

The sturdy four-cylinder, valve-in-head motor delivers constant power from gasoline, kerosene or distillate. Pound-for-pound, it is the most powerful tractor made; a full 74% of its power

being usable at the draw-bar. There is ample power for the usual work, with a generous reserve.

The rigid, patented, "U"-frame of Armor-plate steel is exclusively Wallis, and does away with unnecessary dead weight, and with the difficulties, expense and troubles of the ordinary frame.

The enclosed gears running in a bath of oil—first used by Wallis—have proven so efficient as to be a model for other tractor makers.

Moreover, a well-known institution, 44 years old, sells the Wallis, America's Foremost Tractor.

We Join Your Local Banker in Urging this Immediate Investment

Your banker will favor your investment in the Wallis, for he knows it will pay you handsome profits. Ask him.

The demand for the Wallis is tremendous. We urge you to see your nearest dealer immediately so as to have your Wallis for fall work.

Meantime, send for a complimentary copy of an interesting catalog showing the many economies in time, labor and money that proper tractor equipment can bring to you.

WALLIS

America's Foremost Tractor

J. I. CASE PLOW WORKS Dept. T 19 RACINE, WIS., U. S. A.

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Minneapolis, Minn. Kansas City, Mo. Omaha, Nebr. St. Louis, Mo. Oklahoma City, Okla. Indianapolis, Ind. Denver, Colo. Dallas, Texas
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Distributors Everywhere



Sun Kissed Albemarle

Come to Albemarle County, Virginia, on the Eastern slope of the Blue Ridge Mountains, Piedmont Section. Good enough for Jefferson—Why not *You*? Home of the famous Winesap and Albemarle Pippin apples. Excellent schools, including the University of Virginia. Two trunk line Railroads. You will like it in Albemarle.

WRITE FOR FREE BOOKLET

Chamber of Commerce
Charlottesville, Va.

A-1 Farm Manager Wanted

Mr. A. G. Seiberling, vice-president and general manager of The Haynes Automobile Company, Kokomo, Indiana, requires immediately the services of an experienced man who understands farming thoroughly and who is also a farm manager. Mr. Seiberling owns and maintains a 260 acre farm in Howard County, near Kokomo, Indiana. On this farm are now being raised hogs, cattle and sheep. There is also an extensive tract of land devoted to the raising of oats, wheat and corn.

The farmer-manager who will take up the duties of working this extensive farm will have ideal living quarters. A newly constructed seven-room house, heated by a furnace, with all other modern conveniences and an automobile garage, will be designated to the farmer-manager for his private use.

Any one who has had farming experience and desires to live comfortably while earning a good income, should communicate at once with Mr. A. G. Seiberling of The Haynes Automobile Company, Kokomo, Indiana. In order to avoid unnecessary correspondence and delay, it is best to have all information possible in the letters addressed to Mr. Seiberling, such as age, experience and salary wanted.

Mr. Seiberling prefers a married man.

Small Fruits

By S. J. Bole

While it is more economical and better in the long run to buy most plants of some old and reliable nursery than to propagate them at home, there is a fascination about the work that many growers are unable to resist. There are cases where a new, rare or expensive variety can be propagated by the grower to his own benefit and delight. This, it would seem to the writer, is especially true at the present time when disease and insects make the selection of vigorous plants of resistant varieties an important but difficult task. As all the small fruits have blossoms open to pollination and because of their mixed ancestry, they do not breed true from seeds. They must, therefore, be propagated by some one of the several methods.

Blackberries and Red Raspberries

Blackberries and red raspberries are propagated by suckers springing up in the rows and middles. This permits the grow-



Raspberry Tips Placed in the Soil. This illustrates the Nursery Method

er to multiply these plants at will by digging up the sucker plants when still dormant in the spring and setting them in a new portion of the plantation. In sandy and well drained soil, root cuttings may also be made by cutting the larger roots into six-inch lengths and planting in the early spring directly into the plantation or the nursery row.

The suckers are most often planted, however, and these are dug up by cutting the underground root a few inches on either side of the point of attachment of the sucker. The canes are cut back to a stub a few inches in length and then planted into their permanent positions. The tender and growing plants may also be dug up when a few inches to two feet in height and set into permanent rows. This work, however, would come in a busy season and a little more care is necessary as hot and dry weather makes it a little more difficult for these plants to grow. The suckers are most readily dug by means of a light, medium sized spade. Care should be taken to dig and set the plants while they are still dormant. This may not only spell success or failure but in case of growth the plants may be severely stunted.

Black and Purple Raspberries

Black and purple caps do not propagate by either root-cuttings or suckers and so do not spread in the row, the new shoots springing from the crown of the plant from year to year. Their natural and only method of propagation is that of root-tips. In nature the canes grow tall and finally falling over their growing ends come in contact with the soil, in which position they take root in the fall of the year and send up a plant the next spring. When

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these brambles are kept cleanly culti-
vated, it is often difficult for the tips to
hold in one position long enough to take
root on account of the blowing about of the
canes, and so must be covered with soil at
the right time.

Plants are more apt to be vigorous and
healthy if taken from a young plantation
where disease is kept well under control.
During August or early September and
when the tips have begun to widen out at
the ends, they are placed in a nearly verti-
cal position in the soil, to prevent their
growing out of the soil again, and covered
to a depth of two or three inches. In well
drained soil, these are left until spring and
then dug up and planted in permanent
rows; in badly drained soil, they should be
lifted with a potato fork just before
freezing weather and stored through the
winter in a cool and moist storage cellar.

In case of the bearing plantation, only a
few plants can be secured from each hill,
but nursery men by pinching back several
times secure a great many divided canes
which are all near enough to the ground to
take root. Where no fruit is grown,
nurserymen are able to get forty plants
from each hill. These are packed twenty-
five in a bunch and shipped to the grower.
Unusual care should be taken to set these
out before they start growing in the spring.
These like seed potatoes have a tendency
to sprout early and begin a vigorous
growth. As the sprouts are quite apt to
be killed in transplanting, the canes are
devitalized and either make a weak
growth or fail to grow altogether.

The Dewberry

While the dewberry is a blackberry with
a prostrate cane, they are propagated by
either tips or root-cuttings, some varieties
responding better to one method and some
to another. Root-cuttings grow more suc-
cessfully in well drained, sandy or sandy
loam soils. In case of a serious outbreak
of anthracnose, that portion of the cane
above ground should be either cut off
when planted or dipped into a medium
strength of lime-sulphur spray. On get-
ting plants from a nursery one should
store them in a cool, moist place like a
fruit cellar. If one heels in the plants and
the planting is delayed by rains, the tips
are almost sure to start growth and not be
dormant when planted.

Currants and Gooseberries

Currants and gooseberries are propa-
gated by stem cuttings. As these are both
woody perennials the roots start most read-
ily from the youngest or one-year wood.
Currant cuttings are made by cuttings of
the previous summer's growth. The upper
end is cut a trifle above a bud and the
lower end straight through a bud. In
case of varieties that root readily, the cut-
tings are made about eight or nine inches
in length; of varieties that root with diffi-
culty, they are made three or four inches
longer than this.

Currants root quite readily especially
when started in well drained sandy or
sandy loam soil. They are planted a few
inches apart in well prepared soil, being
placed about six inches apart in the nurs-
ery row and the rows three or four feet
apart. As soon as the leaves drop in the
fall the cuttings may be made and planted
or they may be made in February, stored
in a cool cellar and kept from drying out
until time for planting in the early spring.

If planted in the autumn, the cuttings
should be set with the top ends just cov-
ered with soil. A mulch of straw should be
placed over these just before the ground
freezes to prevent their being pulled up
during the winter by alternate freezing
and thawing.

Most varieties of gooseberries are much
more difficult to propagate than are cur-
rants and they are generally started by
mound layering the young shoots in July
or when they are about eighteen inches in
height. This is done by shovelling soil
directly into each hill until there is a
mound of well packed soil about a foot
deep.

Early the following spring the mounds
are removed and the shoots cut off near the
ground. Short roots will have formed
near the base of the shoots and one cut-
ting, about a foot in length, is made from
each shoot. These are planted the same
distances and in the same way as are cur-
rant cuttings and cultivated and hoed.
Nurserymen sell current and gooseberry
plants either when they are one or two-
years old. The two-year plant is very
much superior to the one-year plant due
to its better developed root system.



Another
FEDERAL

"Return loads will cut
your haulage cost."

Two-ton Federal operated
by Edwards & Pattillo, of
Fullerton, Calif.

Hauling Oranges

Fruit haulage requires *dependable* haulage.

Due to its high value and perishable nature,
fruit must be transported from orchard to
market with far greater certainty and de-
spatch than any other load a motor truck
can carry.

Edwards & Pattillo, of Fullerton, Calif., real-
ize this fact, and use three Federal trucks in
contract haulage for the Placentia Orange
Growers' Association.

These three Federals have stood up to their
heavy loads and daily service with that ab-
sence of trouble and economy of operation
which typify Federals in all classes of heavy-
duty work.

"Federal Traffic News"
sent free on request.

FEDERAL MOTOR TRUCK COMPANY
32 FEDERAL STREET DETROIT, MICH.

FEDERAL
One to Five Ton Capacities

Grapes

As yet American varieties of grapes are
propagated from cuttings the same as cur-
rants. Most vigorous growing varieties
root quite readily and the cuttings are
made from 10 to 14 inches in length or just
long enough to locate the lower roots at
the correct depth in the soil. Slow growing
varieties and those that root with difficulty
should be propagated by layering a young
cane after cutting away all but about ten
or twelve buds. These are laid down in the
spring in a shallow trench which is gradu-
ally filled with the hoe as the shoots de-
velop from the buds. The blossom clus-
ters are picked off these shoots if any
appear. The vinifera varieties in Cali-
fornia have soft, fleshy roots readily at-
tacked by phylloxera and so most of these
are grafted on native, resistant stocks.
The propagation of plants is painstaking

work and no one should ever try it who
isn't able to plant and grow a successful
garden and keep it free from weeds.

KEEPING THE TREES CLEAN

By Lewis Hillara, Kansas

Nothing makes a tree look old and on
the decline like a rough bark, stubs of
dead limbs, and an intermingled network
of branches with part in a dead and dying
condition. Let's clean up these old trees
and make them look like the good old
standby's they should be if they are not.
Then if we have a nice young orchard let's
see that the trees never get into this condi-
tion.

Keeping the bark of the tree smooth and
clean is of importance not only from the
appearance viewpoint but because such a
tree will keep much freer from insects and
parasites. We never know how many of

these pests we destroy when we give our
trees a cleaning up.

Painting cut limbs, digging out and
cleaning up the scars where limbs have
rotted into the tree, and cleaning out any
wound, keeps the trees looking well and
adds to their life and fruitfulness. A dis-
infecting paint and a rich concrete will be
valuable helps in making trees long lived.

Watersprouts are a sign that a tree is
weakening. When they begin to show up
it is time to get busy if we want the tree to
serve us longer. Many a tree that has
been covered with watersprouts has been
given new life by feeding and proper prun-
ing and cleaning up, so the case is not
hopeless by any means.

Codling moths have little chance to
hide through the winter on trees kept
clean of rough bark and crevices about
limbs and dead branches.

Pear Psylla and Blight

Can Be Controlled by Fall Spraying with

SCALECIDE

THE COMPLETE DORMANT SPRAY

"Makes a Tree Outgrow Its Troubles"

"SCALECIDE" kills the adult Psylla, and, if sprayed before they lay their eggs, control is easy and effective. Therefore spray in Fall or early Winter.

And this same spraying will also control Blight Canker which is the source of infection for Fire Blight. No cutting-out is necessary. "SCALECIDE" meets every requirement without cutting or painting.

But don't expect to clean up your orchard in one season. Two or three years of faithful spraying with "SCALECIDE" will secure practical control of Pear Psylla and Blight, and invigorate your orchard. "SCALECIDE" makes a tree outgrow its troubles."

A fruit grower near Buffalo, N.Y., who failed to control Pear Psylla

with Lime-Sulfur, losing his entire crop in 1916, "became desperate" and tried two barrels of "SCALECIDE". In 1918 he wrote:

"We were delighted when June came to find no trace of Psylla nor any since, and, instead of sooty twigs, had the most beautiful foliage imaginable. In justice to your material, I think you ought to be in possession of these facts."

We recently visited several large orchards, embracing 150,000 trees of all varieties. Two years and a half ago, when we first saw these orchards, many of the trees seemed past redemption from Blight and Canker, but after three dormant sprayings with "SCALECIDE", they are now in perfect health and vigor, and loaded with fruit, while other orchards in the neighborhood are badly blighted.

We would like to give you more information about "SCALECIDE" and the names of these and other big men who are making money by using it. Write today for a copy of our guarantee and name of dealer near you. Address Dept. 11

B. G. PRATT COMPANY

Manufacturing Chemists

50 Church St.

New York City



Stock Raising in Western Canada

is as profitable as Grain Growing

In Western Canada Grain Growing is a profit maker. Raising Cattle, Sheep and Hogs brings certain success. It's easy to prosper where you can raise 20 to 45 bu. of wheat to the acre and buy on easy terms.

Land at \$15 to \$30 Per Acre
—Good Grazing Land at Much Less.

Railway and Land Co's. are offering unusual inducements to homeseekers to settle in Western Canada and enjoy her prosperity. Loans made for the purchase of stock or other farming requirements can be had at low interest.

The Governments of the Dominion and Provinces of Manitoba, Saskatchewan and Alberta extend every encouragement to the farmer and ranchman.

You can obtain excellent land at low prices on easy terms, and get high prices for your grain, cattle, sheep and hogs—low taxes (none on improvements), good markets and shipping facilities, free schools, churches, splendid climate and sure crops.

For illustrated literature, maps, description of lands for sale in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., apply to Superintendent of Immigration, Ottawa, Canada, or

G. J. Broughton, 113 W. Adams St. Chicago, Ill.
J. M. MacLachlan, 215 Trac. Term' Bldg. Indianapolis, Ind.
George A. Hall, 128 Second St. Milwaukee, Wis.

Canadian Government Agent

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Latest design. Durable, Powerful, Reliable. Massive. Built to do hard, heavy work—to give lasting service. Uses Cheapest Fuel. Pulls 25 to 50% more H.P. than rated. Shipped on three months' trial. Easy terms. Sizes 1 1/2 to 22 H.P. 10-Year Guarantee. Book free—postage paid.

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FREE BOOK

BEEMAN

One Horse Tractor

It Plows, Cultivates, Harrows, Mows
Does 1 horse work at 1/2 horse cost. Successfully operated by unskilled labor. Thousands of pleased users. Does not pack ground. Turns sharp corners, goes close to fences. Useful the year around.

The original garden tractor \$285 (c.o.d. factory)

4 H.P. Engine
Runs cream separators, washing machines, pumps, etc.

Write for interesting Book.

BEEMAN TRACTOR CO.
241 South Ave. St. Minneapolis, Minn.

American Fruit Grower

Fruit Growing in the Rhine Valley

By S. W. Fletcher
Pennsylvania State College

The orchards scattered along the Rhine Valley present some marked contrasts to American methods. We grow fruit in immense orchards; one man may own several hundred acres. Here one man rarely has over ten acres and there are many community orchards in which different individuals own certain trees or rows of trees. A large proportion of the fruit grown in America comes from orchards a thousand miles or more from the markets, and is shipped in solid carloads, or even train loads. Here practically all the fruit is sold locally and without being packed. In the states we grow comparatively few varieties commercially; certain cosmopolitan sorts like the Concord grape, Elberta peach, Bartlett and Kieffer pears, Baldwin and Ben Davis apples comprise a large proportion of the total quantity marketed. Here there are innumerable varieties, and each district has developed local sorts which are not grown elsewhere.

In America we train fruit trees to low herds, or short trunks, so that the bearing surface may be close to the ground, where it may be pruned, sprayed and harvested with economy of labor, and we seldom take any other crop out of the orchards, after it has come into bearing, except fruit. Here the trees have trunks six to eight feet high, so that the land may yield another crop beneath the trees, such as pasture, grain or potatoes. Labor is so cheap that the cost of harvesting these high trees is not a factor.

In America we plant fruit trees so far apart that each tree has room for natural development; and, except in hillside we like straight rows, as a matter of economical management as well as for looks. Here the trees are crowded together like a timber culture, and very often there is no alignment. In America all commercial orchards worthy of the name are sprayed with chemicals two to six times a year in order to produce fruit free from worms, scab, smut and other blemishes; and great gasoline-driven spray pumps or dusters are used, covering ten or more acres of orchard a day. Here very little if any spraying is done, and this with laborious and inefficient hand sprayers strapped upon the back. In America we grow fruit mainly to eat; in Europe fruit is grown mainly to drink; this has an important influence on the cultural methods.

Most of the trees along the river are "standards" like ours, but dwarf trees, trained to wires, trellises and against walls are common in German and French gardens, and frequently are grown commercially. The trees are dwarfed by being grafted on a slow growing root; for example, dwarf pear trees are secured by grafting a pear scion on quince, which is of smaller stature and checks the growth of the cion. The trees are also kept dwarfed by severe pruning. A French gardener spends more time training a single dwarf tree which will bear 20 to 40 apples into a cordon, espalier or some other intricate design, than we do in pruning a standard tree that will bear 20 to 40 bushels of apples. Peaches and apricots can be grown in Europe when trained against walls in places where they would not thrive if planted in the open because the walls afford warmth and protection. Dwarf fruit trees are very interesting as showing that the fruit tree is plastic material in the hands of the gardener, to be shaped into any form that he desires, but they are impracticable commercially in America, because of labor involved and the small yield per acre. A man who has only a small garden can get a lot of fun growing dwarf trees, but not much fruit.

ALAS! POOR EDITOR

When the plumber makes a mistake he charges twice for it.

When a lawyer makes a mistake he has a chance to try the case all over again.

When a carpenter makes a mistake it is just what he expected.

When a doctor makes a mistake he buries it.

When a judge makes a mistake it becomes the law of the land.

When a preacher makes a mistake nobody knows the difference.

But when an editor makes a mistake—Good Night!

Kindly mention American Fruit Grower when writing to advertisers

Great Britain's Fruit Market

By Edward A. Foley, London

IN A SURVEY of the markets for American fruits and vegetables in Great Britain, the following facts should be borne in mind:

(1) The war has undone in five years a great deal of the pioneer work in the introduction of American fruits into Great Britain.

(2) Ocean tonnage for the transportation of produce is scarce, and its movement is erratic.

(3) Foodstuffs are still regulated in Great Britain by the Food Controller and the Board of Import Restriction.

(4) American farm products are popular, and their reintroduction is merely a matter of American skill in handling the trade.

At present there is no opening for American garden truck or berries, owing to the fact that the Netherlands and other nearby countries are flooding the English markets with produce that formerly found its way to the central empires. This has already called forth a protest from English growers, whose produce is mostly grown under glass, with largely increased overhead expenses, due to the high prices of labor, glass, fertilizer, and transportation, and can not compete successfully with the cheaper product from abroad.

In fruit lines, however, American produce is in line for greatly increased sales.

Popularity of American Apples
Our apples arrive at a time when the English markets are bare of fruit, and their popularity is evidenced by the fact that in the early part of the year over 1,000,000 barrels were imported from the United States. Much of this produce sold at or near the control price of 56 shillings (\$13.61) per cwt. of 112 pounds.

Oranges Also in Demand

Oranges are equally popular and are selling at a good price. Pears, peaches, cherries, and apricots have not as yet appeared on the local markets, and these markets will have to be developed next year, when transportation across the Atlantic has improved, and freight rates have been lowered. For the present apple and oranges are Great Britain's principal fruit imports, and a few observations on the handling of these commodities may be helpful to the American trade.

In England the apple is regarded as being a necessity not only for food but for health purposes as well. The local crop, whatever it may be, is entirely inadequate to supply the need of an all-the-year-round commodity. This year the local crop will be unusually light, owing to a drought in May and June. The Australian and Tasmanian apple crops have already been disposed of. Upon the United States and Canada, therefore, will fall the duty of supplying the apple needs of the coming season. The local crop will be disposed of before the American crop comes on the market.

Restrictions on Imported Fruit

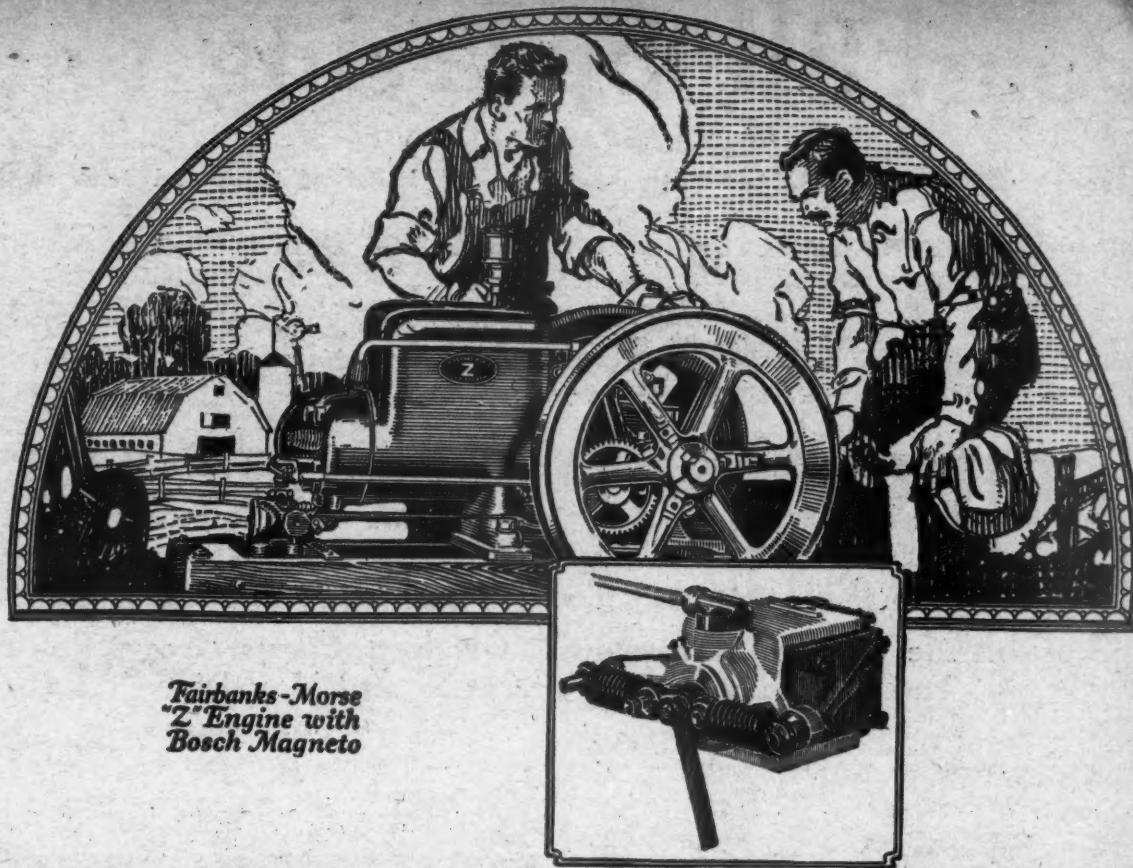
On June 28 the Food Controller extended the license for the importation of apples and oranges from September 1, 1919, to March 1, 1920. Pears have not been licensed, as they are considered a luxury, and the present condition of British exchange requires that no money be sent abroad for luxuries. Much effort is being expended by local importers looking towards the modifications of these regulations.

The present control price on apples will remain until September 1, when it may be modified. This is of importance to the American exporter. If the price is maintained as in the past, the home-grown apple crop will be marketed as rapidly as possible, as the grower will not take a

Present Prices Fixed for Imported Apples

| SIZE OF CONTAINER | Maximum Price | |
|--|----------------------|---------------------|
| | When sold by package | When sold by weight |
| | Per barrel s. d. | Per cwt. s. |
| Barrels containing not less than 112 pounds. | 58 4 (\$14.17) | 56 (\$13.61) |
| Barrels containing not less than 130 pounds. | 67 8 (\$16.44) | 56 (\$13.61) |
| Boxes containing not less than 38 pounds. | 19 9 (\$4.80) | 56 (\$13.61) |
| All other classes. | | 56 (\$13.61) |

In these reports all conversions of foreign prices into U. S. money have been made at the par value of the foreign moneys without regard to current exchange.



Fairbanks-Morse
"Z" Engine with
Bosch Magneto

Farm Engine Supremacy

THE famous "Z" Engine and the Bosch high tension, oscillating magneto combine to make the one SUPREME farm engine. The dependability of the Bosch in delivering a steady succession of hot, intensive sparks is well known and adds the one possible betterment to the "Z"—always recognized as America's foremost farm engine. Call on your "Z" Engine dealer and see the result of this newest combination—FAIRBANKS-MORSE "Z" WITH BOSCH MAGNETO. Over 200 Bosch Service Stations assist our dealers in delivering maximum engine service. Prices—1½ H. P., \$75.00—3 H. P., \$125.00—6 H. P., \$200.00—all F. O. B. Factory).

Fairbanks, Morse & Co.

MANUFACTURERS CHICAGO

chance of deterioration, storage charges, etc., when he knows that his product can not be sold at an advance over the fixed price.

Graded Fruit Demanded

With the heavy freight charges only good fruit will bring a profit to the grower. Over 80 per cent of the fruit sent to Great Britain is on consignment and is sold at auction after a thorough inspection. This means that first of all the fruit must be correctly graded, as stated in Reports on Foreign Markets No. 18, page 2. Un-

graded fruit will surely go to the huckster, and the shipper will have merely a freight bill to pay instead of making a profit at the end of the transaction.

Apples Should Be Inspected

And equal in importance to grading is condition on arrival. Shippers at a distance from the Atlantic seaboard should have a representative at the seaboard to inspect their product. A sea trip is hard on produce, and if any signs of deterioration are noticed the fruit should be sold on the home markets.

learn if we want to compete with them, and we have got to learn this quick and lively. In fact, we have got to cramp a life's learning into a few years."

While we may not entirely agree with the statement that "what there is to be known about apple growing and marketing" we know, yet we must realize that if the South African growers carry out the spirit of this advice, they will soon become a factor that must be reckoned with in the export trade.

CITRUS GROWERS GO TO SCHOOL

Field schools will be held in the counties of southern Florida for the benefit of growers of citrus fruits. The Florida Experiment Station and the United States Department of Agriculture will co-operate in holding these outdoor schools in selected groves where the growers will assemble. Discussions and demonstrations of great value will be held, and the industry will receive an impetus which should lead to larger yields of better fruit.

Severe damage was done to the peach crop in the eastern and northern states, by curl leaf and brown rot.

BUILDING UP EXPORT TRADE

The "South African Fruit Grower" in a recent edition, sounds a note of warning, rather than of discouragement, to the growers who are entering upon the experiment of establishing an export market for apples. It says: "Don't forget that we shall be competing on the overseas market with growers in America, Australia and Canada, etc., who have spent all their lives growing apples, and whose fathers and forefathers did likewise. What there is to be known about apple growing and marketing they know. We have got to

Fall Spraying

IN TEMPERATE LATITUDES

To control SAN JOSE SCALE and other Scale insects, EGGS of Aphis and other species of plant lice.

The SPORES OF FUNGUS, CAUSING THE BROWN ROT OF THE PEACH, and other hangover parasitic fungus diseases.

IN THE TROPICS

SPRAY to control rust mites on oranges and grapefruit, eggs and young of white fly, scale insects and the various forms of fungus and bacterial diseases on citrus and pecan trees, etc.

SULCO-V.B. WILL DO IT RIGHT

(Sulphur—Fish Oil—Carbolic Compound)

A Combined Contact Insecticide and Fungicide of Unusual Merit

For use in the Garden, Greenhouse, Orchard, Citrus Grove, Poultry House, and as a Sheep, Cattle and Hog Dip.

W. H. FOX, Fruits & Produce.

Wolcott, N. Y., Nov. 22, 1918.

I have used and sold SULCO-V. B. for the past seven years with universal satisfaction, and there is no use talking it takes SULCO-V. B., applied last of June, to put that finishing color on all Red Apples.

Yours for Success,

W. H. FOX.

Office of State Entomologist
State Museum, Albany, N. Y.

Sept. 2, 1913.

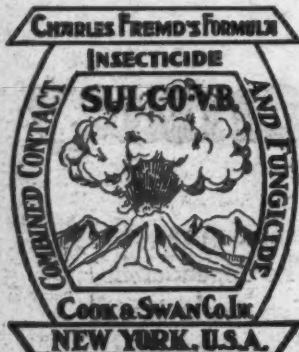
Hon. Albert Yeomans,
Walworth, N. Y.

Dear Mr. Yeomans:—Pursuant to my promise to you of last winter, we secured samples of SULCO-V. B. and made an application, last spring after the leaves had started, to apple, pear and plum trees infested by San Jose Scale. There is not the slightest evidence of injury to the trees or young leaves, although the treatment was so thorough that we have yet to find any living scales on the treated trees.

Personally I was very much pleased with the way the preparation mixed with water and the absence of any tangible evidence of injury by oil.

This should not be construed as a general recommendation, it is simply the result of my experience with this preparation; it certainly looks promising.

Very truly yours,
E. P. FELT, State Entomologist



This registered Trade Mark on the package is your protection

BOOKLET FREE

Send for it NOW!

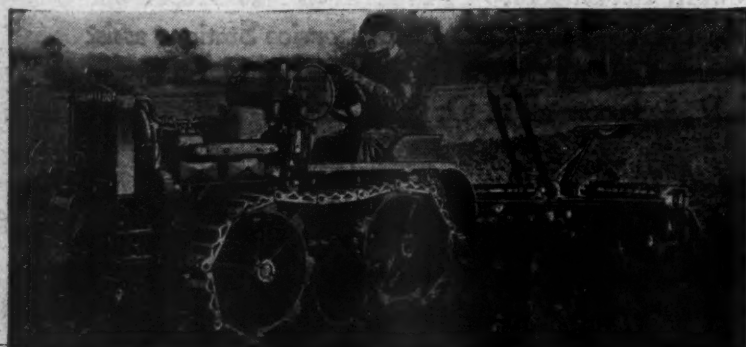
We also manufacture Standard Fish Oil Soap. Of your dealer or direct.
Go to your dealer first.

Who's your dealer?

ADDRESS: **COOK & SWAN CO., Inc.**—Est. 1862

Sulco-Dept. A 148 Front Street, New York, N. Y., U. S. A.

BOSTON OFFICE: 141 Milk Street—GEO. H. FRAZIER, Mgr.



NOW \$1,550

FOR THIS POWERFUL ORCHARD TRACTOR

Here is the tractor that every orchardist should have—and at a low price within the reach of every grower.

Built especially for orchard work—only 53 inches high and 54 inches wide—it can work right up under the trees without hitting the branches. And its short turning radius makes square corners at end of rows.

MONARCH "LIGHTFOOT"
16-9 H. P.

Has broad track laying tread that gives great traction without needless weight. Easily pulls two plows or discs.

Does not pack soil like round wheel tractors. Gets traction in any soil, works on hillsides, straddles ditches, goes through mud and water; works all the time. Pulley in convenient position for belt work—pumping, sawing, etc.

A powerful little tractor for general farm work at a price within reach of all. Write today for folder or, better still, order your tractor at this low price of \$1,550. Sold under Guarantee.

MONARCH TRACTOR CO., 330 First Street
WATERTOWN, WIS.
SPECIAL INDUCEMENTS TO GOOD DEALERS ON THIS ORCHARD TRACTOR

Kindly mention American Fruit Grower when writing to advertisers

American Fruit Grower Some Fruit Notes from Australia

"Apple Culture in Victoria"

Such is the title of an interesting article in the Journal of Agriculture, Victoria, Australia, March, 1919, by J. Farrell, orchard supervisor. His discussion of the treatment for san jose scale is particularly interesting to such of our orchardists as recall the time, not so very far distant, when we were arguing as to what was the best spray for the eradication of this pest. Mr. Farrell says: "Although lime-sulphur is essentially a fungicide, its effectiveness in destroying red mite, aphid and scale insects is favorable spoken of by persons who have used it; but the writer's experience is that oil sprays are much better. At the same time Mr. G. M. Fletcher, orchard supervisor, in charge of the Goulburn Valley district, reports that satisfactory results followed the treatment of san jose scale with lime-sulphur during the last spraying season."

Open Market for America

Sydney, Australia, is keenly interested in developing trade with the United States and Canada. Says "The Fruit World": "In this connection it is interesting to recall that at the Australasian Conference of Fruit Growers resolutions have been affirmed and reaffirmed in favor of an open market as regards America, the reason being given that there is a bigger export market awaiting development there than even in Great Britain and Europe."

Bright Colored Fruit Preferred

It is a fact and one that has to be reckoned with, that the New South Wales people have a distinct liking for colored fruit; they ask for it and will buy it, although a variety not so highly colored, but probably of better quality will not sell so readily. Probably this accounts in some measure for the keenness with which the people purchase the highly colored American and Canadian fruit.

Reverse Seasons Favor Our Fruit

The special value of the American apple lies in its carrying qualities, which enables it to be sent to distant parts of the state where locally grown fruit would not stand the journey. The chief reason for this is that at the period when American apples usually arrive, any Australian fruit of the kind will have been in storage four, five or six months, while the American apples may have been picked from the tree in America six weeks before it reaches a distant portion of Australia.

Cardboard Jam Containers

A patented container of this material is described in "The Fruit World," Australia. "The body is filled with hot jam and a cardboard flange cap is immediately placed on it, thus sealing the contents at the highest possible temperature; the sleeve is then slipped over the cap into its position, jointing on the body portion. The heat of the contents melts gradually a composition with which the shoulder is treated, and as the package cools this composition again solidifies forming two hermetical joints, one between the shoulder and cap and the other between the shoulder and sleeve. Thus closing machinery, which was necessary for the ordinary type of container, is dispensed with. The whole package is light and of strong construction and weighs about one-fifth of the weight of the ordinary jam jar."

CANNED FRUIT FOR EUROPE

European buyers have contracted for practically the entire output of California fruit canneries this year, say fruit dealers and canners of this section. The canneries are having a record year, giving higher prices, employing more help and paying better wages than ever before.

HIGHER WAGES FOR WOMEN

A higher wage scale for women and minors employed in factories and in fresh and dried fruit packing establishments has just been ordered by the Industrial Welfare Commission of California. The new minimum wage of experienced women and minors is \$13.50 per week. Apprenticeship wages range from \$9 to \$12 per week, under the new schedule.

POSTAL ZONE PENALIZES PUBLIC

Under the postal zone law applying to all states west of the Mississippi twelve national periodicals have announced that their subscription rate will be raised to cover the penalty postage. Sixteen great daily newspapers have also gone on a zone basis as regards their subscription price. We have not yet increased our subscription rates, but will probably have to do so.

NO DOMESTIC RAISINS THIS FALL

The California Associated Raisin Company, through its sales manager Holgate Thomas, announces that there will be no raisins to meet the usual fall demand from the domestic trade. August and September are the months of demand and in order to meet it, 50,000 tons are normally shipped from the coast during July. This year only bakers' and confectioners' stock will be shipped and these consignments will go under contract.

PRUNING DWARF PEAR TREES

A subscriber has a row of dwarf pear trees planted three feet apart running through his garden, planted a year ago. He asks how these trees should be pruned.

C. A. Green's reply: My reply is that on planting the branches of these trees should have been cut back at least one-half their length. In July, if considerable new growth has been made, half of this new growth should be cut off. This summer pruning is inclined to cause the trees to come into early bearing of fruit. If the cutting off of the portion of the branches of the new growth is done in the early spring it will cause the trees to be dwarfed in size, but it is generally assumed that this early spring pruning induces growth and not early fruiting, whereas summer pruning as indicated tends to induce the formation of fruit buds and the early fruiting of the trees.

Coming Meetings

Secretaries of all organizations relating to fruit growing are requested to send us notices of their future meetings for publication in this department.

Maine State Pomological Meeting, annual meeting at Bangor, Me., Nov. 17-22.
Indiana Apple Show, Tomlinson's Hall, Indianapolis, Ind., Nov. 8-8.

American Society for Horticultural Science, annual meeting at St. Louis, Mo., week of Dec. 28th.

Florida State Horticultural Society, annual meeting at Ocala, Fla., in April. (Dates later.)

Southeastern Iowa Horticultural Society, annual meeting at Fairfield, Iowa, Sept. 23-25.

New England Fruit Show, annual meeting at State Armory, Hartford, Conn., Nov. 14-18.

Minnesota State Horticultural Society, annual meeting at St. Paul, Minn., Dec. 2-5.

New Jersey State Horticultural Society, annual meeting at Atlantic City, Dec. 1-3.

Ohio State Horticultural Society, summer meeting at Experiment Station, Wooster, Ohio, Sept. 10.

Maryland State Horticultural Society, annual meeting at Hagerstown, Md., week of Oct. 27th.

Farmers' National Congress, annual meeting, at Hagerstown, Md., week of Oct. 27th.

Illinois Horticultural Society, annual meeting at Champaign, Ill., Dec. 16-18.

Iowa State Horticultural Society, annual meeting at Des Moines, Ia., Dec. 9-12.

Mid-West Horticultural Exposition at the Coliseum, Des Moines, Iowa, Nov. 10-15.

Vegetable Growers' Association, annual meeting at Detroit, Mich., Sept. 9-12.

Wyoming Horticultural Society, annual meeting, at Douglas, Wyo., Sept. 10-11.

Virginia State Horticultural Society, annual meeting, at Roanoke, Va., Dec. 2-4.

Montana Horticultural Society, annual meeting, at Missoula, Mont., January, 1920. (Dates later.)

Peninsula Horticultural Society, annual meeting at Chestertown, Md., Jan. 6-8.

Connecticut Horticultural Society, annual meeting, Hartford, Conn., Sept. 12.

TEXAS HORTICULTURAL ASS'N.

By M. E. Hays, Secretary

At our annual meeting on July 17-19 a new constitution and by-laws was adopted and also the name of the society was changed to the Texas Horticultural Association. It is our plan in the future that we hold at least two meetings per year at which time we will have a fruit show in connection with the meetings.

The program this year was devoted to two general lines of work.

1. The ornamental planting of the farm home and also the planting of the highways in Texas. Special attention will be given to the planting of memorial trees. Mr. E. W. Kirkpatrick of McKinney, Tex., read a paper before the society on "Memorial Tree Planting" and is chairman of the committee on this work. It is our plan to use our state tree, the pecan, where possible in this planting.

2. The second line of work was that of marketing. We had two out of the state speakers, Mr. J. A. Hughes of Little Rock, Ark., and Mr. W. B. Farrar of St. Louis. The Texas Horticultural Association is planning on maintaining a bureau of information regarding the crop conditions and general information regarding marketing. The association has on foot plans where they will maintain a paid secretary in the near future to carry out its work. We have raised over half of the necessary money to carry out this work and we believe we will increase the usefulness of the horticultural interests of this state.

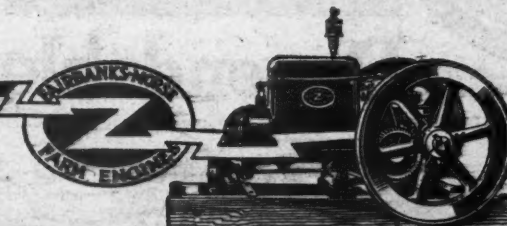
The following officers were elected for the coming year, Will B. Munson, Denison, president; M. Faulkner, Waco, vice-president; G. H. Blackman, Waxachie, treasurer; Eit. Weed Pomeroy, Donna, executive committee; E. W. Kirkpatrick, McKinney, executive committee; M. E. Hays, secretary.

NINTH INDIANA APPLE SHOW

The Indiana Apple Show will again be held in Tomlinson's Hall, Indianapolis, this year. The hall has been secured for the first week in November and plans for the show are being rapidly matured. Indiana will not have a bumper crop of apples this

Announcement

It is the
BOSCH
Spark that
gives real
life to this
farm engine

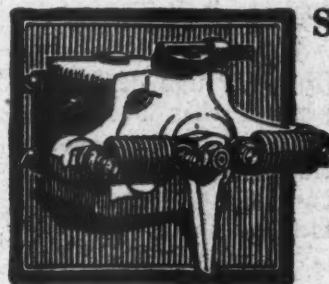


AMERICA'S SUPREME IGNITION SYSTEM

**Largest Magneto order goes to Bosch
Fairbanks-Morse "Z" engine
Bosch High Tension Magneto Equipt**

IN the thirty-fourth year of its successful manufacture of dependable gas engines, Fairbanks, Morse & Co., after conducting the most complete investigation of ignition systems, has decided to equip its famous "Z" engines with America's Supreme Ignition System—the Bosch High Tension Magneto. Thus, the products of two internationally famous organizations—Fairbanks, Morse & Co., engine builders, and the American Bosch Magneto Corporation, magneto makers, combine to make a really great farm engine—an engine whose quality, dependability, and efficiency have no superior. The reason that prompted Fairbanks, Morse & Co. to specify Bosch—the highest priced and highest quality Ignition System made—on their most important product, applies equally directly to your ignition problems on your car, truck or tractor.

BE SATISFIED



SPECIFY BOSCH

AMERICAN BOSCH MAGNETO CORPORATION
MAIN OFFICE AND WORKS: SPRINGFIELD, MASS.
Branches: New York—Chicago—Detroit—San Francisco
More Than 200 Bosch Service Stations in Over 200 Cities
ASK ANY FAIRBANKS-MORSE DEALER FOR NEAREST BOSCH SERVICE STATION

fall but there is an abundance of apples to make a creditable show and the quality is above the average.

This will be the ninth annual show held by the Indiana Horticultural Society. As a result of these efforts the orchard acreage in the state has been greatly increased and the large number of these newer plantings which are now coming into bearing will add materially to the commercial crop of Indiana apples.

The society looks with pride upon its accomplishments but realizes that the work is not yet complete. There is a very large area in the state especially well adapted to fruit growing which is not well suited to general farming. If all the suitable land in the state were planted to fruit and properly cared for Indiana would stand where she belongs at the head of the fruit growing sections of the Union.

IOWA AND THE LIVELAND

Editor of AMERICAN FRUIT GROWER:

In reply to O. L. Burkholder of Indiana in regards to the Liveland Raspberry apple will say I have one tree, it is the hardiest, healthiest tree I have. It is four years from planting. Last year it had eleven apples on it, this year it is loaded too

full and will have to pick them off.

Dan Maher a neighbor of mine has two trees in his family orchard. Strong healthy trees and loaded full. When I saw his trees I wanted one tree, I only have four town lots. Last year it snowed and the snow froze on the bunches of bloom and a tree next to it in full bloom had no apples. This year it rained, frost killed all the native plum bloom and half or three-fourths of the bloom on the other apple tree, but Liveland Raspberry came out smiling with a full crop. I wish I had as good a winter apple to bear. Jonathan never blights with us. Yellow Transparent is short lived. The Horticultural report of 1912 of Iowa calls Jonathan the backbone of South Iowa orchards.

Delicious is an Iowa product. There is where it originated and I would like to hear reports on it. I have trees five years planted not an apple on them.

LOUIS KALDENBERG, Iowa.

The "Western League of Plant Quarantine" was organized recently in California by the "California Association of Nurserymen" and the "Fruit Growers and Farmers." This measure is expected to rid the west of pests.

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of the
AMERICAN FRUIT GROWER
It Brings Results

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HONOR-BILT
PUMPS
FOR EVERY PURPOSE

There's one for every home or farm need. Myers Self-Oiling Electric House Pump shown here, and other Myers Hand and Power Pumps for home water systems, give running water in kitchen, bath room, laundry, and in barn or troughs. Myers dealers are everywhere. They handle Myers Hay Tools, Door Hangers and Hand and Power Spray Outlets too. Ask your dealer or write for catalog. It's FREE.

F. E. MYERS & BRO.
150 Fourth St. Ashland, O.

Get Daily Market Reports

It seems to be a fact, sorry to say, that what is secured without cost or without effort is usually not made of use or appreciated at its full value. This is found to be the case with many of the important publications issued by the Department of Agriculture at Washington.

The Bureau of Markets of the Department of Agriculture, during the active shipping seasons issues daily market reports on fruits grown in commercial quantities which require wide distribution. The Bureau maintains 10,000 miles of leased wire for this service. In the various large terminal markets of the country will be found market stations from which these market reports are issued daily, giving the market movement from the entire country for the day previous, information as to prices ruling at shipping points in producing sections, and the market for the date of issue as reported over the leased wire by trained reporters in the Market News Service.

In the producing sections during the active shipping season, field stations are established by the same bureau, usually at the largest shipping points. Here are issued daily market reports similar to those issued from the city market stations, but containing, in addition, more complete information as to the distribution of the commodity being reported. Special releases issued by these offices, bearing upon various phases of the work of marketing, are also published.

These reports are mailed daily, without charge to anyone interested in the crop being reported and to whom such reports will be of benefit, whether they are growers, shippers, dealers or persons who wish to keep in touch with the market for various other reasons. During the year 1918, the market stations issued over 20,000,000 copies of these daily reports on fruits and vegetables, while the field stations mailed approximately 1,700,000 reports. These covered a wide territory and did much to inform the trade of market conditions.

However, there are many fruit growers who have not yet made use of this service, which is without expense to anyone. Its value is realized only upon making a careful study of the reports as they are received daily. The benefit derived, both in the producing sections and in the markets, from this expert work by the Bureau of Markets is testified to by the growers, shippers and dealers throughout the United States.

Application may be made for reports direct to the Bureau of Markets, Department of Agriculture, Washington, D. C., or by addressing Market Surveys, Bureau of Markets, in any of the following cities: Chicago, Kansas City, St. Louis, Omaha, Minneapolis, Detroit or Cincinnati.

The Ohio Experiment Station, Wooster, O., has established by test that sizing machines are a profitable investment in commercial orchards. The machine-sized fruit brought 30 cents more per barrel than the hand-sized fruit from the same section.

THE ROBIN AND CHERRIES

As white as snow, with perfume sweet,
Your dress when first I came
Up from the South my love to meet,
"First Robin" is my name.

CHORUS

Cherry, cherry, ripe red cherry,
Gleaming brightly in the sun;
Cherry, cherry, robin's merry,
Robin's heart you've won.

The humming bees your blossoms kissed,
To make your fruiting sure;
And not a worm or bug I missed—
To make your fruiting pure.

CHORUS.

Through all the Spring, on ground or wing,
I warred on insect pest;
And now 'tis cherry time, I sing,
And take a well earned rest.

CHORUS.

As pink, or red, or black, you greet
Me from the swaying trees,
And nod an invitation sweet,
With every vagrant breeze.

CHORUS.

O cherries ripe, so rich and sweet,
You tempt me to take toll
In payment for my work complete—
So let me have my dole.

CHORUS.

—Jacob Edgar Bookstaver.



This is the package
with the moisture-
proof jacket—

that keeps Chesterfield's original flavor and freshness intact. Your Chesterfields never become either soggy or dry. They always reach you in prime shape for smoking.

And, Chesterfields do something for your smoke-hunger that you've always wished a cigarette would do—they "touch the smoke-spot"—they let you know you're smoking—they satisfy right down to the ground!

It's the blend that does it, and the blend can't be copied.

Liggett & Myers Tobacco Co.

Chesterfield CIGARETTES

—of Turkish and Domestic tobaccos—blended

They SATISFY!

Special Commercial Pear Crop Report, August, 1919

By Bureau of Crop Estimates, Washington, D. C.

LEON M. ESTABROOK, Chief of Bureau

THE COMMERCIAL pear crop of the United States, as issued by the Bureau of Crop Estimates, shows a five point increase over last month, and the commercial crop in the important states is now estimated at 8,351,000 bushels as compared with 7,589,000 bushels last year, or 110% of last year.

The feature of the report is the very large crop in California and the west generally. California has the largest com-

mercial pear crop in its history, and the production is estimated at considerably over 4,000,000 bushels.

Conditions throughout the east have shown some improvement over last month, particularly in New York and Delaware. The Hudson Valley pear crop now promises to equal that of 1918. Michigan and Illinois have also increased over the July estimate.

| State | Condition | | Commercial Crop | | % of last year |
|----------------------|-----------|------------|-----------------|------------|----------------|
| | Aug. 1919 | Final 1918 | Aug. 1919 | Final 1918 | |
| New York | 35 | 46 | Bushels | Bushels | 76 |
| New Jersey | 35 | 37 | 630,000 | 828,000 | 95 |
| Delaware | 30 | 37 | 200,000 | 211,000 | 95 |
| Illinois | 47 | 32 | 240,000 | 296,000 | 81 |
| Michigan | 15 | 45 | 153,000 | 104,000 | 147 |
| Missouri | 45 | 28 | 102,000 | 307,000 | 33 |
| Texas | 75 | 60 | 38,000 | 24,000 | 158 |
| Colorado | 86 | 55 | 75,000 | 60,000 | 125 |
| Washington | 80 | 65 | 387,000 | 182,000 | 213 |
| Oregon | 90 | 60 | 1,600,000 | 1,300,000 | 123 |
| California | 95 | 83 | 608,000 | 406,000 | 150 |
| Total, United States | 60 | 63.7 | 4,318,000 | 3,871,000 | 112 |

Commercial Size ALL Purpose Evaporator
for Fruit Growers, Farmers and Evaporators.
Sold under guarantee. For further information, address
HOME EVAPORATOR CO., St. Louis, Mo.

EGG-O-LATUM KEEPS EGGS ONE YEAR

It costs only one cent per dozen eggs to use Egg-o-latium. There is no other expense. Eggs are kept in carton or box in cellar. Eggs may be boiled, poached or used in any other way, just like fresh eggs. Simply rubbed on the eggs—a dozen per minute. A 50c jar is sufficient for 50 dozen eggs. At Drug, Food and Poultry Supply Stores or postpaid.

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For your own satisfaction compare Camels with any cigarette in the world at any price!

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"I Would Not Part with it for \$10,000"

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Avocada, Aristocrat of Fruits

By I. J. Condit

BY WHAT name shall we know it? Alligator pear, used in English speaking countries; ahuate, the appellation used since prehistoric times by the natives of Mexico and Central America; or avocado, the meaningless but euphonious term adopted by the U. S. Department of Agriculture, the California and Florida growers and by experiment stations the world over? The commission men simply call them "alligators," "gators," or just "pears." The general public looks blank when the name avocado is mentioned but assumes an intelligent expression when informed that it means the same as alligator pear. Since only a very small percentage of the hundred million Americans ever saw or heard of the fruit it will probably be a simple matter to market it under the name avocado, now that the supply is getting to be worthy of commercial consideration.

But what is it anyway, and what is it good for, my readers will ask? The ac-

Seedling trees have grown sixty feet high and with fifty feet spread.

Budded trees do not grow so large. Budded trees bear in from two to eight years, according to variety.

Orchards may be so arranged that fruit may be had the year round.

Trees will carry the fruit weeks after ripening.

Another question which may be asked is, "Why have not California growers been producing these 'delectable fruits' in commercial quantities if they are so profitable?" The reply is that Californians have been so interested in oranges, lemons, prunes, peaches, grapes, and other crops that the novelties well known in other countries have had to win their way in favor by slow degrees. During the past few years, however, the plantings of avocados, loquats, Japanese persimmons, guavas, jujubes, pomegranates, date palms and pistache nuts will be considerably increased. Compared to the grape, orange,



The Taft Avocado Tree is Now 19 Years Old. Last Year It Produced About 1,200 Fruits Which Brought the Grower Ten Dollars a Dozen. The Shelter is for Wind Protection

companying illustration will show what the fruit looks like and the following brief statements will answer some of the questions:

The Avocado is a tropical or semi-tropical fruit.

It is not a pear, and the term "Alligator Pear" is a misnomer.

It is a very delectable fruit and tastes like nothing but an Avocado.

The shape varies from round, to oblong or gourd shape.

The size varies from an ounce to two or three pounds.

The color varies from light green to a dark purple, almost black.

It has one large seed. The tree does not come true from seed.

Avocados are ripened off the tree, from one to two weeks after picking.

They have a very high food value, and are easily digested.

They contain from 12% to 30% fat, but very little sugar.

They may be eaten with any course of food from soup to nuts.

Wherever grown in quantities they are a staple article of diet.

Ninety-five per cent of the people like them at first—if given good ones.

The price is high in California because of scarcity.

We have two general types in California—the Mexican and the Guatemalan.

The Mexican type bears thin-skinned fruits and the leaves give an anise odor.

The Guatemalan has a thick skin on the fruit.

Avocados will stand about as much frost as citrus. The Mexican is hardier than the Guatemalan.

The tree is evergreen and makes a beautiful shade tree.

The leaves look somewhat like those of the magnolia.

There are over 200 varieties of avocados classified in California.

The California Avocado Association recommends eight varieties for propagation.

olive, and fig, which were introduced by the Mission fathers in 1769, the avocado is a new fruit, having been first planted here in 1871 and having borne fruit in appreciable quantities only during the last ten or fifteen years. The large bearing trees are still mostly seedlings, but it is the performance of these seedlings which has interested growers in the commercial possibilities of this food-fruit.

The following records of seedling trees are interesting and probably unparalleled in American horticulture:

Record of Production, Original Chappelow Tree

(Date furnished by Mr. Wm. Chappelow of Monrovia, Calif.)

| Date | Total No. of Fruits | Price per Fruit | Price Received net for Fruit | Main Crop Ripened |
|------|---------------------|-----------------|------------------------------|-------------------|
| 1902 | 300 | 10 | \$22.00 | Sept. |
| 1903 | 380 | 10 | 32.00 | Sept. |
| 1904 | 605 | 10 | 54.00 | Aug. |
| 1905 | 575 | 25 | 130.00 | Aug. and Sept. |
| 1906 | 235 | 30 | 65.00 | Sept. |
| 1907 | 465 | 25 | 85.00 | August |
| 1908 | 1200 | 15 | 140.00 | July and Sept. |
| 1909 | 260 | 25 | 60.00 | August |
| 1910 | 285 | 25 | 66.00 | October |
| 1911 | 1023 | 25 | 250.00 | July and Oct. |
| 1912 | 350 | 25 | 76.00 | September |
| 1913 | 20 | | | |
| 1914 | 3215 | 18-25 | 404.00 | Sept. and Oct. |
| 1915 | 1723 | 25 | 199.70 | |
| 1916 | 2861 | | 218.00 | Sept. to Dec 15 |

* Freeze.

The original Sharpless trees produced 2 fruits in 1912, 20 fruits in 1913, 76 in 1914, 250 in 1915, and over 600 in 1916-1917. The fruits average 20 to 22 ounces in weight, are pear-shaped and when mature show a beautiful bronze color.

The Taft tree at Orange, planted in 1890, produced its first fruit in 1909. In 1910 it bore 700, in 1917 about 400, and in 1918 about 1,200 fruits. Both the Sharpless and Taft avocados have been netting the growers 75c to \$1.00 each for several seasons, most of the supply going to the better

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hotels and cafes in Los Angeles. trees in orchard form are not ex- to grow as large as seedlings; in fact harvesting of fruit, spraying (if that becomes necessary), and pruning of large trees would hardly be practicable on a commercial scale. A yearly average of marketable fruits per tree from ten- to fifteen-year-old trees planted thirty-five feet apart for standard varieties may be expected.

A Heavy Producer

A conservative estimate by a Florida grower now a resident of California, shows an acre of avocado trees in orchard form will produce 10,000 pounds of fruit annually. Enthusiastic promoters might make a profit of \$9,800 per acre with fruits at \$1.00 each, since the expenses will average about 2 cents per pound. The average price for seedling fruits at Miami, Fla., is 10 cents per pound, but for fruit of good quality the net returns vary from 25 to 50 cents per pound. Compared with returns from citrus fruits these figures look very rosy and it is no wonder that commercial growers are beginning to take advantage of the possibilities of the avocado. The area over which the present commercial varieties of avocados can be grown in



The avocado fruit is sometimes pear-shaped, but in no other respects does it resemble a pear. This fruit is the I. X. L. a variety not yet grown commercially in California.

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Florida is said to be limited principally to two counties in the southern part of the state. The introduction of the hardier Guatemalan varieties however will undoubtedly extend this area much beyond the limits now regarded as safe.

In California the principal developments have been in Los Angeles and Orange counties where over two hundred acres have been planted in orchard form. Seedling trees, however, have fruited in various parts of the state from San Diego to the county and small acreages have been planted in the foothills of Fresno and Tulare counties with considerable promise of success. Rapid extension of planting has been hindered by the high prices of nursery trees (\$3.00 to \$10.00, depending on the variety), lack of definite knowledge regarding varieties best for market, and tenderness of many trees to frost. The importance of putting this infant industry on a firm foundation was realized in 1915 and there was effected an organization known as "The Ahuacate Association of California," the name shortly after being changed to "The California Avocado Association." The objects are as follows: The prevention of errors which are bound to occur in any new industry; the dissemination of cultural and other information; and the education of the public concerning the uses and the food value of the fruit. Two meetings are held each year and the illustrated annual reports of these meetings for 1915, 1916, 1917 and 1918 issued from the headquarters in Los Angeles form the most reliable and up-to-date information on the avocado available anywhere.

Foreign Varieties Investigated

At one of the early meetings of the association a resolution was passed requesting the Department of Agriculture to send an explorer to Central America to collect the very best varieties of avocados available and submit budwood to the growers for trial. As a result the department sent Mr. Wilson Popehoe to Guatemala for a six-months' study and survey of the native trees, all of which are seedlings, the results of the trip being published as Bulletin 743. Mr. Popehoe has recently returned from a similar trip to Mexico, an account of his

observations being published in the California Association's Report for 1918. Budwood of the best Guatemalan varieties was received by the growers in 1918 and the results of their fruiting will be watched with extreme interest.

Mr. E. E. Knight, a Californian who spent most of his life in the tropics where avocados are a daily article of food, made a special trip to the highlands of Guatemala in 1914 to get budwood of the best seedlings he could find. He secured 24,000 buds and gave them his personal attention in packing and transportation with refrigeration but succeeded in growing less than 100 trees of four varieties, the Linda, Rey, Queen, and Knight. These varieties are all fruiting this season and the fruits are being judged critically by growers and intending planters. Whether the varieties secured by Mr. Popehoe will prove better than those already grown by Mr. Knight remains to be seen.

Food Value

In point of food value the avocado outranks practically all other fruits. A summary of investigations by the California Agricultural Experiment Station shows that the total dry matter or solids is far greater than is noted for any other fruit; the carbohydrates, between 7 and 8 per cent, are low when compared with other

fruits, since the avocado contains practically no sugar; the mineral matter is much greater than that found in any other fresh fruit, the avocado belonging to that class of foods which yield an excess of the base-forming elements as contrasted with nuts which furnish the acid-forming elements in excess.

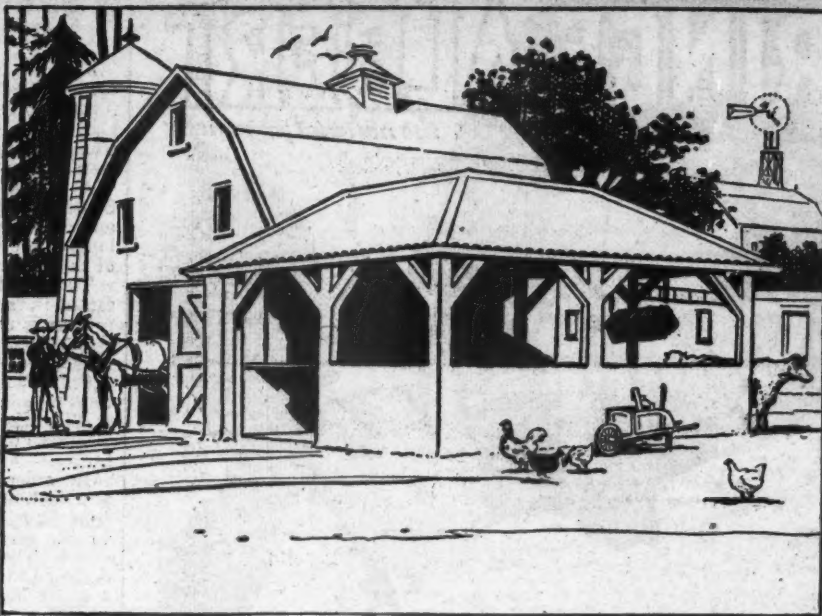
The chief value of the avocado as food is due to its high fat content which varies from about 9.8 per cent to 31.6 per cent. The only fruit comparable with the avocado in this respect is the olive, but analyses of numerous varieties of each fruit show that the avocado ranks higher in oil or fat than the average or commonly used olive. The olive is moreover a fruit which cannot be used fresh but requires a pickling process to make it palatable.

Digestion experiments at Berkeley with young men who were fed partly on avocados showed that the digestibility of avocado fat is on a par with that of butter fat and not below that of beef fat.

Judging from its composition, the avocado should prove to have laxative qualities of a peculiar or individual type possessing as it does the combination of the usual fruit principles and that of fat or oil. The testimony of men who have lived in countries where avocados are common and used as a daily food, is that the fruit does act

as a laxative if eaten heartily but never causes any serious disturbance.

During the past few months many predictions have been made by various persons regarding the future of the avocado industry in California. Almost without exception these expressions are very encouraging to prospective planters and to those who are interested in the development of the industry. The most common question asked of avocado men today is, "Do you really think the avocado will become an important commercial fruit?" and they usually answer, "I really think so." It is not only the nurseryman who has trees to sell who thus expresses himself, but conservative business men, experienced ranchers, and others who have been watching the fruit for many years both here and in other countries. It is of course conceded that there will be many failures, that scores of trees now planted will never come into bearing, and that some varieties which look promising at present will prove of little value in the light of future experience. I believe with others, however, that commercial avocado culture offers very bright prospects at present if the grower plant good healthy trees of the proper varieties in an approved locality and uses good business judgment as well as common sense in handling his orchard and marketing his fruit.

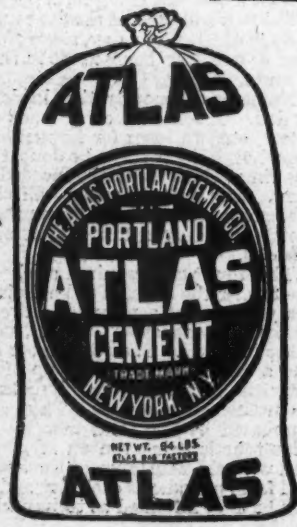


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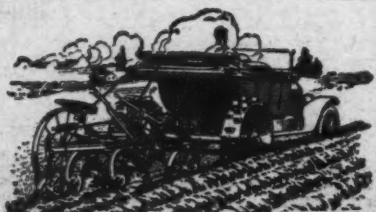
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Toppy red bags, tidy red tins, handsome pound and half pound tin humidors—and—that classy, practical pound crystal glass humidor with sponge moistener top that keeps the tobacco in such perfect condition.

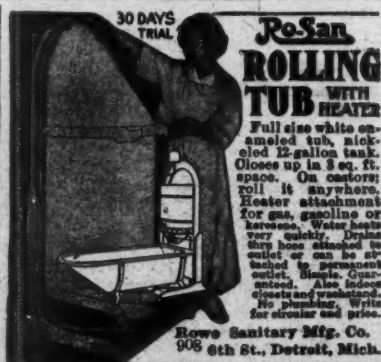
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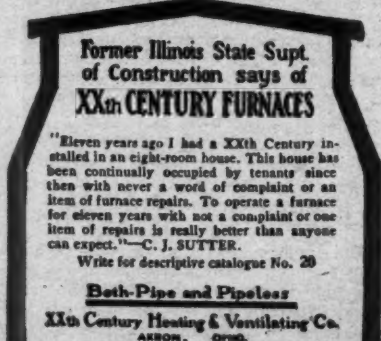
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Facts on National Motor Truck Development Tour—Under Direction National Association of Motor Truck Sales Managers, 912 Kimball Bldg., Chicago—Started from Chicago August 4th—Finish Milwaukee October 4th.

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There will be 20 to 25 factories represented in the tour.

Tour is under the direction of the National Association of Motor Truck Sales Managers.

Only one truck entered from each factory.

All trucks will be pneumatic tired. Trucks will range in size from one to 2½ ton.

In order to demonstrate the truck's practicability for farm use there will be a truck body in the tour capable of carrying wheat, corn, oats, potatoes and other crops. There will be a truck with a bed designed to carry loose hay. There will be a truck body to carry hogs, cattle, etc. In fact, a body for every farm purpose.

The tour will proceed slowly, covering an average of 50 miles a day, stops of from an hour or two days being made in the towns en route.

Numerous demonstration loads will be carried. Trucks will carry loads of hogs, wheat, etc., to town for farmers, showing them how quickly it can be done, thus saving time which is vitally needed on the farm. The demonstration will show the economy of transporting farm products by motor truck over that by horse drawn vehicles.

This tour was organized solely to show the farmer the benefits to be derived from the purchase of a pneumatic tired truck. Time means money on the farm, as in every other industry. There is a labor shortage and a consequent speeding up of all farm activities to fill the gap. Trucks are not essentially city vehicles. They are being purchased by the thousands by farmers. This tour is being run on schedule time, and with the assistance of the newspapers and farm periodicals each city and vicinity will be kept informed as to just what time the tour will arrive.

The Department of Agriculture in Washington is deeply interested in the tour and is co-operating through agricultural colleges and county agents. Moving pictures will be taken en route and will be exhibited all over the American continent to show the value of the truck to the farmer.

A Jackie band has been donated by the Government and by this act the Washington officials have put their stamp of approval on the tour.

There will be a representative of the Chicago bankers on the tour who will discuss with the bankers en route the proposition of financing truck sales and keeping the "paper" in the home town.

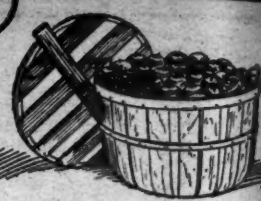
A train of trucks a mile long equipped with pneumatic tires will be a novelty.

WHAT PLANTS WILL STAND SHADE

I am asked to specify what kind of ornamental plants will thrive best when grown in partial shade of a building or trees.

Reply by C. A. Green: This is not an easy question to answer. Most plants and trees demand not only a good supply of sunshine, but of ventilation by winds and breezes. I notice that fruit trees planted in partial shade on my place 20 feet away from a shade tree, do not make nearly the growth of those more distant and more fully exposed to sunshine and fresh air. Most people will be surprised to learn how important it is that the rays of the sun should fall directly upon most kinds of plants and trees.

My suspicion is that evergreen trees such as Norway spruce will bear shade better than many other kinds of trees. Golden glow succeeds fairly well in shade. Generally speaking, vigorous growing shrubs and trees may be made to give satisfactory growth in the shade. Further than this I cannot say since every location differs from another. Ever bear in mind that the shady side, the near north side, of a house is not a favorable place for getting results from ornamental shrubs and fruit trees.



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Apples find a readier and quicker market, among present day discriminating dealers, when they come neatly and safely packed in the

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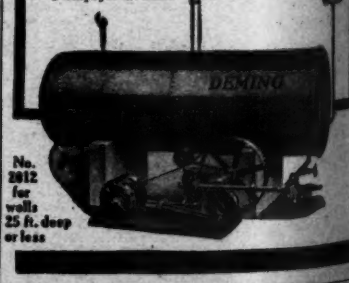
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The Orchard Home

A Section for Orchard Women and the Children

Edited by Mary Lee Adams

Shall We Can or Dehydrate?

THE DEHYDRATED food product has many advocates, that it would be worth while for housekeepers to find out for themselves whether the advantage of dehydration over canning more than offset certain disadvantages.

As housekeepers, we have all acquired the art of canning and, I had almost said "the canning habit," and found that it added greatly to the comfort, healthfulness and economy of winter living. Quantities of food that would otherwise go to waste is popped into cans and held there until it is needed. We know all that can be said in favor of canning, but how many of us have tried drying by modern methods?

Certain experts not only claim that the convenience of storing such products is greatly enhanced by the fact that a large quantity of food is thus reduced to small bulk, but they also assert that the flavor of the fruit or vegetable so preserved is finer and more like that of the fresh product than any canned fruit or vegetable ever is, while the time for which it may be kept without deterioration is many times longer.

There is the drawback that food so preserved cannot be served without a period of soaking in water which tends to restore the original bulk, whereas canned food may oftentimes be served right out of the can or jar. It is comparatively seldom that we have such a hurry call for extra provisions that we cannot afford the extra time required before the dried food is fit to serve.

Bulletins giving accurate instructions in drying fruits and vegetables may be obtained from the Department of Agriculture, Washington, D. C., and it would be very interesting if our women readers would this season put up some dehydrated food, and later give us their experience as to the comparative trouble of preparing, quality and flavor and keeping quality of the two methods.

Are You Happy in Your Work?

IF YOU are a worker in your home or out of it, and were asked if your work were a blessing to you, would you answer "yes" without hesitation? If not you are either blind to your good fortune or the circumstances of your occupation must be peculiarly unfortunate. Too much work is surely bad, resulting as it does in fatigue, in lack of opportunity for diversion and broader mental development, and sometimes in posi-

tive illness; but enough real work to occupy some hours of each day is a true possession.

After work a vacation is splendid. It furnishes a change, turns the thoughts into new channels and refreshes the entire system, but when people are fully rested they must either have some actual work or must make their play into the semblance of work if they are to remain mentally satisfied.

If there be nothing more important than golf on hand, we are prone to make a job of it. To play so many rounds and to strive for a certain score as earnestly as if it were our first duty. There are some, especially very young persons, who seem able to keep up their spirits in an endless round of pleasure, but if you watch the merest society bud in her speedy succession of frivolities, you may plainly see that she is not "taking it easy" any more than is the office girl or the housekeeper.

The rest cure is more often prescribed for the society woman than for any other; and it is fully as often needed by her. If you are of the workers you may say that she could have rested if she wished to. The point is that she did not wish to. Instinctively we feel the need and urge of action. The main difference between the pleasure seeker and the worker is that the latter is accomplishing something worth while, and this gives a satisfaction beyond anything the idler knows.

The Child Mother Loves Best

ISN'T it a wonderful thing about mothers that they can have many children without a favorite among them? We ought to say—isn't it one of the wonderful things? for pretty nearly every thing about a real mother, from the time when she cheerfully risks her own life to give life to the little one, through all the years when her own welfare is second to that of each and every child, is wonderful.

Mothers, however, are but human and subject to human frailty. Some of them feel, and show, a preference. This is terribly painful to the less favored one. Can you imagine anything more sure to make a child feel lonely and homesick, even in its own home, than the knowledge that brother or sister is held dearer?

Thank heaven! the large majority of mothers are blessed with such love for every one of their children that they themselves could not tell which comes first in their heart. They love the first-born because he

is the first; the latest baby because she is the youngest; the second boy for his manliness, the girl for her unselfishness or, perhaps, even for her beauty or pretty ways. A mother does not need much excuse for loving, but there comes a time when the most impartial of mothers realizes that there is one child whose claim on her tenderness exceeds that of all the rest.

And which child is this? It is the one that needs her most. When it is sick, when it is in trouble, when it grieves, then the mother knows that her whole heart is bound up in that particular child. What a heaven of refuge mother's arms then become! How merciful both for child and mother that the supply of love gushes forth to answer the need. This is one of the very most precious things in life, and the only pity is that thoughtless youth sometimes does not realize until too late what irreplaceable loveliness goes out of life when mother goes.

Foster the Love of Flowers

THE MINDS of young children are so impressionable that they are often compared to tablets of soft wax upon which indelible lines are traced, but whose sensitiveness is much impaired in later years, particularly if the mind is not kept in active use. This rare and fleeting quality of the childish mind is often neglected by parents who say—"the children have plenty of time ahead of them to learn that."

The detail of the thing learned is of far less importance than the training of the mind in the desired direction. If your small boy wants to read, give him books that interest him even if, to you, they seem lacking in absolutely useful information. He is learning a habit, which is far more useful than learning a fact that will be forgotten long before he is grown. When the love of books is fairly established he may be guided to the selection of useful books.

Children almost invariably love flowers. You will influence your boys and girls to appreciate flowers if you give them some plants for their very own and help them to raise these by giving advice and commendation. Never forget to praise children for their efforts. Remember that what you are trying to do is not primarily to teach Rose and Willie how to raise flowers, but how to love them. Careful tending will follow upon affection, and a spirit of interest will be created which will form a life-long habit.



BEAUTIFYING THE HOME & GROUNDS



By Mary Lee Adams

Have a Fine Green Lawn

Readers of the American Fruit Grower continue to show very great interest in beautifying their home grounds. To our subscribers we send a book on Landscape Gardening, free upon request. This book covers thoroughly the principles of beautifying the home grounds. It describes all leading shrubs, shade trees, flowers, etc. It shows what to do and what not to do. It will save you from making many mistakes. There is a right and a wrong way to make a landscape planting. For those who prefer their plans specially designed by an expert landscapist, we have arranged to furnish such plans at no expense to them. Send us a sketch showing location of building, stating approximate size of area to be planted, and amount you are willing to spend this year on shrubs, etc. This free landscape service will insure your getting a beautiful, original plan for your home grounds or local school. A landscape planting is an investment, and a few dollars spent thus will vastly increase the value of your property. Address Home Beautifying Dept., American Fruit Grower, Chicago.

ALMOST before we realized that summer was fully come, autumn has breezed in upon us with September days. The passing of summer brings regret to the gardener, but the coming of autumn brings a keenness of appreciation for those bright blossoms that must soon pass. The showy displays of dahlias, scarlet sage and chrysanthemum, with the rest that make gay our autumn beds and borders, are peculiarly dear as we think of the long bleak months that will follow their sturdy bloom.

September in many sections is one of the pleasantest months of the year. It is also one of the busiest in the orchard home. Now comes the apple harvest, bringing the most intensive activity to the fruit farmer and to the housewife. But we cannot afford to give up thoughts of our gardens which have given us such joy. If we hope for equal or greater pleasure next season, we must begin to make preparations for the coming year.

Seed Your Lawn Now

First in its claim upon our time and attention comes the lawn. Though flowers are the natural accompaniment of the garden, I would almost rather have a good lawn and no flowers, than flowers without a bit of green grass. The flowers are the more beautiful, but the eye needs the refreshment of a smooth green surface even more than it needs the excitement of flashes of color, however lovely.

Once established, the lawn needs less care than the same expanse of flowers. In our orchard homes we usually have space to gratify our longing for both flowers and lawn, and right now is the time to assure ourselves of a good lawn next summer and to transplant many flowering things that should be getting ready through the winter for their duty of blooming next summer.

If the lawn is once well-established and kept clipped in order that the fresh green near the roots may at all times be apparent, not very much more care is required of us. Perhaps a perfectly new lawn may be allowed a little greater length of blade for a time during the first summer heats in order that the roots may be shaded, but young grass that is kept closely clipped, shows a far greater inclination to stool out and form a good, even mat. Clipping also prevents the maturing of seed, which is most exhausting to the young plant, and the clipping themselves, if very light, may be allowed to lie as they fall, thus making a mulch and shade for the tender rootlets, and protecting them from the hot sun.

Argument for Fall Planting

We think of the refreshing green lawn as a spring-like thing, but, according to most authorities, we cannot have the best lawn in spring unless we sow the seed in early autumn. If you are starting a new lawn, if your old lawn needs reseeding, or if there are worn spots, do not delay getting the best lawn mixture, and prepare your ground immediately.

This is done by spading or plowing up the surface to the depth of two feet and

working in plenty of well rotted manure. Sheep manure is especially good, but hard to procure. There is little danger of the soil being made too rich for the grass, though as time goes on it is a good plan, instead of spreading a layer of manure over the surface each fall, to alternate this every other year with a dressing of bone meal and wood ashes. This treatment will insure a bright green growth in spring.

The great argument in favor of fall sowing over the spring sowing of grass seed, is that the ground is now well warmed and is likely to be watered by plentiful later rains. Root growth will start and the plants be in better condition to withstand the first heat of spring and the usual droughts of summer. If artificial watering be resorted to, it will be found best to give a thorough soaking and then wait for some time before watering again, rather than to sprinkle daily. Mere surface dampness does not help the grass roots much.

Rolling the Lawn

It is a fine practice to roll the newly seeded lawn, for the roller presses the fine seed into the earth and saves much of it from being blown or washed away. The soil should not be sprinkled before the new seed is rolled in, otherwise much of the seed will stick to the roller and be lost. If it is not practicable to roll the newly seeded lawn, rake the seed in lightly, making each stroke in the same direction.

If your lawn is weedy and not too great in extent, the only sure cure except plowing up and making over, is to dig out each offender with a sharp knife. If the turf shows signs of wearing out, 500 pounds of nitrate of soda to the acre will prove a satisfactory tonic. Make up your mind to be rid of the bare, unsightly patches which can spoil an otherwise lovely lawn. Such patches must be dug up and treated as if an entirely new lawn were to be started. Add extra fertilizer before sowing the seed and try to get the ground wet as soon after seeding as possible.

Moss on the lawn is a telltale sign of lack of fertilization or of ill-drained and sour soil. Subsoil drains may be necessary to take off the surplus dampness. Dig up the moss spots, cover them with mixed wood ashes and lime and allow this dressing to lie all winter, being thoroughly soaked into the ground by the winter rains. Re-seed this surface in the spring. One and one-half bushels of air slaked lime to the 1,000 square feet will sweeten a sour soil.

Get the Best Lawn Mixture

When getting your lawn mixture be sure to inform the seedsman of your locality, of the nature of your soil, and whether the lawn is shaded or fully exposed to the sunlight. These things have a vital effect upon the seed, and the seedsman will know what will flourish best under your particular conditions. It has been wisely said that five pounds of good grass seed is worth more than ten pounds of poor seed, therefore economy should induce you to purchase the best.

A good, suitable lawn mixture will supply a number of grasses which reach their perfection successively and will therefore keep the lawn always fresh and green throughout the growing season. A cloudy morning or late afternoon when no wind is blowing, is a good time to scatter the seed. Put it in a pail and sow about three bushels to the acre. Seed may be sown much too thick and it will not develop properly unless given room to germinate freely.

When to Transplant Flowers

We have so often heard that such and such flowers must be transplanted in the spring, and again that this must be done in the fall, that we feel a justifiable confusion as to which season to select for this trying interlude in a plant's life. Most of us know that the dormant season is right for plant-



Better Housekeeping

by Lillian Ring



Out With Spots and Stains

A SPOT or stain is an ugly thing, like a nick in a choice piece of glass or china that the possessor oftentimes bemoans as worse than broken. A spot often ruins the best tablecloth, dress, etc., while the fabric itself is as fine as ever, thus putting the article temporarily out of commission until the question is settled as how to best rid it of the unwelcome addition of misplaced matter.

The more haste employed in the removal of a spot the less difficult it will be for the longer it is left the more fixed it becomes. This does not mean to rush for the first cleanser on which you can lay your hands; that might prove more disastrous than delay. The agent which takes out one stain may make another only more difficult to remove, hence it is wise to consider the nature of the material first—whether it be woolen, silk, cotton or linen or a combination of these fabrics.

The color element also plays a part. Silks, velvets and satins have been finished with a sheen and the spot eradicator must not injure this.

Nature of Spot

After determining the kind of material, look into the nature of the spot. Food stains are of three kinds, fat, sugar and albumin. Fat stains penetrate the material and spot it on both sides. They make light colored fabrics look darker and darker ones gray and dusty looking. Sugar stains are stiff and usually crack when rubbed. Albuminous stains will peel off rather than crackle. Besides food stains there are those caused by rust, ink, grease, paint, etc. These we can identify by their characteristic odor or color.

Many of us today look upon these stains as hopeless when we have only to learn the use of the chemicals at hand, together with a few necessary implements, and set aside a place in the laundry for this purpose to have a household free from spot or stain.

Provide yourself with a medium sized, earthenware, enamel or glass bowl and a medicine dropper, the latter being essential that in applying the chemical only the spot for which it is intended is touched. A glass stirring rod, pads of old linen, cheesecloth or gauze and a fine sponge together with a metal topped table or in lieu of this a japanned metal tray large enough to hold all the chemicals needed together with the bowl completes the laboratory outfit.

See that the shelf in the laundry is kept

ing because at that time the sap is not running and the shock of transplanting will be less. Still, I have known the tender wild azalea to be taken up bodily while in full bloom in its native woodland, and set in a favorable spot without showing the least resentment.

Besides, to confuse us further, the dormant season covers part of the autumn and part of the spring. As a rule, the early blooming plants prefer being set out in autumn as this gives them a chance to become established in the new place before they are called upon to stand the strain of blossoming. Many late flowering plants, such as chrysanthemums, are better moved a little before they wake up in the spring.

Evergreens, which hold their leaves and life at full tide through the winter, should never be planted in the autumn. Spring bulbs are all ready for fall planting because they have been practically dormant all summer. The earliest blooming bulbs may be set out earliest in the fall. Early flowering herbaceous plants, such as foxglove, peony, oriental poppy and most lilies should be planted in early fall. September is a good month for setting out your hardy perennials. Never put this off until late autumn as they will then fail to make root growth. If iris are to bloom next summer they must be planted now. Almost all deciduous trees and shrubs—those that drop their leaves in winter—should be transplanted after the fall of the leaf.

replenished with Javelle water, oxalic acid, potassium permanganate, hydrochloric acid and ammonia and you are ready to take care of any sort of spot which water will not touch.

Method of Procedure

Collect your materials for work on the table or tray—sort the stained garments as in washing so that similar stains can be treated at the same time. Partially fill the bowl with lukewarm water, hot water will set many stains and cold water is not a thorough enough rinsing. Stretch the stained portion over the bowl and work rapidly. Fill the medicine dropper with the chemical and apply it a drop at a time to the stain, being sure that the entire spot is covered with the chemical. If removing ink apply Javelle water first. Wash the dropper well, fill it with oxalic acid and again entirely cover the spot.

Next dip the stain into the water and keep redipping it until thoroughly rinsed. Repeat this process as often as necessary to remove the stain so long as the stain is rinsed as quickly as the chemical or chemicals are applied so that the material will not be rotted. For very small stains apply with the glass stirring rod rather than the dropper.

Javelle water will remove coffee, grass or aniline dye stains, however, for the last named it must be followed up with oxalic acid.

Iron rust is quickly removed by hydrochloric acid with a small quantity of ammonia put in the rinsing water.

Javelle water bleaches colors and makes silk and wool tender but there are few stains on white goods that will not yield to it.

Oxalic acid is only perfectly safe on white goods.

Potassium permanganate can be used on all white goods and many colors and is harmless to the most delicate fabrics.

Try the action of the chemical upon a bit of the material where it will not spoil the garment. It is often advisable to remove the stain at the expense of the color which can sometimes be restored by the careful use of the easily applied dyes now on the market. The following are reliable recipes for making these chemical solutions which should be kept tightly corked and in the dark except when in use.

Javelle Water

1 pound washing soda 1/2 pound chloride of lime
1 quart boiling water 2 quarts cold water

Put the soda in an agate pan and add the boiling water. Mix the lime in the cold water. Let mixture settle and pour the clear liquid into the dissolved soda. Bottle.

Oxalic Acid

1 ounce crystals 3/4 cup water
Dissolve crystals in water. For a dilute solution add an equal quantity of water.

Potassium Permanganate

2 teaspoonfuls permanganate crystals 1 quart water
Dissolve crystals in water.

The Simpler Stains

Sugar stains need only water for their removal, warm for linen or cotton and cold for silk or woolen.

Albuminous stains such as blood or egg should be well brushed to remove as much of the coagulated particles as possible. What stain is left will dissolve in warm water.

Fat stains are not so easily removed because fat is not soluble in water. A method old but good is to use several layers of white blotting paper over and under the spot and place a warm iron over this. Do not have the iron hot as this will darken the fat.

The strongest chemicals can be used without harm to the most delicate fabric if directions are carefully followed and that which the spot or stain had marred material to look upon again.

Our Boys and Girls

By Edith Lyle Ragsdale

1st Prize Letter (Boys)

There are four species of bats that I know of. They are the common bat, the long eared bat, the long nosed bat and the vampire. The latter are found in Brazil and are very much dreaded because they devour the larger animals by biting them.

Bats are sometimes defined as being animals with wings of skin. When they are at rest they fold their wings around them covering their bodies as if in a mantle similar to our closing an umbrella to diminish its volume when it is no longer required. Bats do not like to descend to the ground because they are very awkward and slow in attempting to walk along the ground; also they find themselves in a very inconvenient position to resume flight.

Bats hunt their prey at night and spend the day in caverns, lofts, church spires and old ruins or the trunks of trees. Their eyes although small are organized for seeing not in complete darkness but in twilight or in the light of the moon and stars.

Some bats measure 18 inches from tip to tip of the wing, but the bats in this country are small. The bat I saw measured about six inches from tip to tip. It was found in a tree that had been struck by lightning.

Submitted by Clarence Trollope, age 12, K. No. 1, Oswego, Kans.

1st Prize Letter (Girls)

Bats belong to the group of wing-handled, flying mammals, having the forelimb peculiarly modified so as to serve for flight. They are animals of the twilight and darkness, and are common in temperate and warm regions but are most numerous and largest in the tropical regions. All European bats are small and have a skin resembling that of a mouse. Many bats are remarkable for having a singular nasal cutaneous appendage, bearing a resemblance to a horseshoe. Bats may be divided into two sections—the insectivorous or carnivorous, consisting of all European and most African and American species, and the fruit eating belonging to the tropics. An Australian fruit-eating bat, commonly known as the kalong or flying fox is the largest of all the bats and does much mischief in orchards. But the best known is the Dismodue. As winter approaches, in cold climates bats seek shelter in caverns, vaults, ruins and deserted buildings, where they cling together in large clusters, hanging head downward by their feet, and remain in a torpid condition until spring recalls them to action. Bats generally bring forth two young which, while suckling, remain closely attached to their mother. The parent shows a strong degree of attachment for her young and, when they are captured, will follow them, and even submit to captivity herself rather than forsake her charge.

Submitted by Miss Mabel Taylor, Box 108, North Wilksboro, N. C.

TANGLES

No. 13—Small Change

Change a letter in money and find a sweet.
Change a letter in link and get something used by printers.
Change a letter in hay and get a bird.

No. 14—Charade

My first at Christmas you will see,
Red and green and glossy;
My second is right near the knee
And grows on every horsey.
(Let's put on our caps and see if we
Can guess this pretty poesy.)

ANSWERS TO AUGUST TANGLES

No. 11—Four Word Square

MOAT

OGLE

ALAN

TENT

No. 12—Behadings

Shoe (s-hoe); Agate (a-gate); Gale (g-ale).

"PEANUTS"

(A Puppy Tale)

(Book rights reserved)
There was another dog of whom I was very fond. His name was Rags, and the first time I ever saw him he came yelping along the road, a tin can tied to his tale. I guess you never heard anything like the tin that can was making. Buddy and Sis

and I heard it and out all three of us ran. When Rags saw me he stopped running and yelping and stood quite still while Buddy untied the string that held that horrid old can.

"It," said Buddy, "I had the fellow that tied that can onto you, little dog, I'd, I'd give him a pair of black eyes!" Which might have been wrong but pleased Rags, for he whined and wagged his tail.

Sis gathered him up in her arms and we all went back to the house. When the Mistress saw us she never said a word, for she was used to our ways—we were always doing something like that—but just got a big bowl of milk, fresh and warm, and set it before Rags. How that dog did eat! Why, sure as I'm alive, I don't believe he'd ever tasted milk before!

After that Rags was a constant visitor at the big house. He wasn't pretty, just the kind of a dog you'd expect to be called Rags. His coat was rough and shaggy, his ears were scarred from many battles and his tail merely a stub. But such eyes! Why they were as brown as Sis' eyes and almost as human in expression. He had the most cheerful disposition of any dog I have ever known. He believed everybody his friend and, alas, was many times brought to grief by his misplaced faith.

I seldomly got mad at Rags though he tried my patience. He was forever hungry and had a habit of nosing around and finding my food. One day he unearthed a bone of mine; it was a perfectly good bone, too; I had buried it and dug it up a number of times and I resented anybody else getting it. My! how we did fight for possession! I am the largest but Rags had had more experience than I and he got the bone.

Buddy and Sis and Dink and Rags and I had lots and lots of fun. Rags was sort of a trick dog and could do the most funny things, so, of course, we all played circus, and Rags was the clown. There was no end to his tricks. He could stand on his head, walk on his hind feet, play dead, shake hands, sit up, nod his head for "yes," and ever so many more. Buddy and Sis made him a clown suit and he seemed to like wearing it.

"Most every nice day, all through the summer, we'd go out in the orchard (not near the bee hives) where the Master had put a little tent for us and the children to play in.

We'd make believe there were the most people there (of course there wasn't but we "played like"). Buddy was ringmaster and Sis was the lion tamer. When Buddy said a whole lot about what he called "wonderful 'tractions'" of the show, Sis would act like I was the lion and make believe I was awful fierce. Then Dink would be the rest of the menagerie and the performance would end with Rags going through all his tricks. Lots of times there were really-true people who would come and watch him. The Master said that at some time Rags had been with a circus.

When I was nearly two years old and Sis stood near Buddy's shoulder, a funny thing happened. I very seldomly went into the big house, and so didn't know anything about it.

It was this way: One day as we were playing, romping over the lawn, the Mistress came to the door and called me. She never called me Peanut. She always called me Rex, which, as I believe I said before, was my really-true name.

"Rex," she said, "come here." I always obey her, so I trotted up to the door, waving my great plumy white tail. "Come in, boy," she invited. "Come in and see your new playmate."

I hardly know how to tell what it was I saw, tucked up in a sort of basket thing all trimmed up with white lace and blue ribbons. It was little and squirmy and pink and I was a little bit afraid of it until the Mistress said:

"Can't you kiss the baby, Rex, it's going to be your pal same as Buddy and Sis."

I edged up a little closer and smelled it. Then I poked it with my nose and it opened a pair of the bluest eyes I ever saw. Then it opened its mouth. That tickled me. I gave a sharp yelp, like I always do

Continued on page 46



The HOUSEKEEPERS EXCHANGE

by Edith Randolph

We will pay \$1.00 each for helpful suggestions which will save time, money or strength in all sorts of housework. None save original ideas can be accepted. Unaccepted manuscripts will not be returned unless an addressed, stamped envelope is enclosed. Address "Housekeepers' Exchange," American Fruit Grower, Chicago, Ill.

An old washboiler which has "seen better days" may have the inside covered with two or three coats of bathtub enamel and the outside with any desired color, and the housekeeper, on the farm especially, has a bread box large enough to accommodate a baking of bread. A few nail holes made in either end allow good ventilation.

When freshly grated coconut is desired, try running it through the food chopper instead of grating it. Both time and cut fingers are saved.

Window shades may be renovated by cleaning with a damp cloth, laying on a flat surface and giving them a good coating of ordinary paint to which a little wax has been added. The wax does away with the paint causing the shades to crack.

To peel salsify easily and without waste, after thorough cleaning, parboil and then plunge in cold water when the skin will slip off easily. Put back in the same boiling water so as not to lose any of the fine flavor.

Clothes or draperies which have been exposed to smoke, especially the smoke of

oil stoves, should be soaked in cold water and the water changed frequently before being put in suds. If the goods are colored, put salt in the cold water.

Discarded talking machine needles make excellent substitutes for brads, when framing pictures at home. Having sharper points, they are more easily driven in than brads and hold the cardboard more firmly.

Paint, after having dried, can be removed from washable fabrics by saturating with spirits of turpentine, then rubbing on soap. Let stand a few minutes and wash. If not entirely removed repeat application.

In canning gooseberries, hull and wash, cover with boiling water and let stand until they turn white; turn off all water, pack berries in jars and fill jars with boiling water and seal. When wanted for use pour off all water and cook in a syrup of sugar and water. They require only two-thirds the amount of sugar as when canned the other way. The water poured off is of use in making delicious lemonade.

Freshen the oriental rugs by wiping with water to which one tablespoon of borax and one tablespoon of ammonia to each gallon of water have been added. This will not injure the rugs.



The Afgco Cook Book

by Beatrice Holmes

All recipes contained in the Afgco Cook Book have been tested and consequently the housewife will be saved any disappointing experiments.

Blueberry Muffins

1/2 cup shortening 2 teaspoons baking powder
1/2 cup sugar 1 cup milk
2 eggs (beaten well) 1 cup flour
1 1/2 cups blueberries 1 teaspoon salt

Cream shortening and sugar, add egg. Sift salt, flour and baking powder together and add alternately with milk to first mixture. Add berries. Bake in hot buttered gem pans twenty-five minutes.

Fish Souffle

2 tablespoons butter 2 tablespoons flour
1 cup milk 1 cup cooked fish
4 eggs 1/2 teaspoon salt

Make white sauce of the butter, flour, milk and salt. Add the fish. Remove from fire and add the well beaten egg yolks. Cool. Fold in the stiffly beaten whites. Pour into a buttered baking dish. Bake in water bath in a moderate oven thirty minutes.

Coffee Mousse

1 cup strong coffee 1 1/2 tablespoons gelatine
1 quart cream 3 tablespoons cold water
1 cup sugar 3 tablespoons hot water

Soak gelatine in cold water, then dissolve in hot water. Add coffee and sugar. Set in pan of ice water and stir until it begins to thicken. Fold in whipped cream. Put in tightly covered mold. Pack in salt and ice for four hours.

Rice Salad

1 cup cooked rice 2 cups diced celery
1 cup diced beet 1/2 teaspoon mustard
1 teaspoon powdered sugar 1-2 teaspoon cayenne
1-3 cup vinegar

Mix all together and serve cold.

Nut Loaf

1 egg 2 1/2 cups flour
1 cup sugar 2 1/2 teaspoons baking powder
1 cup sweet milk 1 teaspoon salt
1 cup chopped nuts 1 teaspoon salt

Beat egg, add other ingredients. Beat well. Let stand ten minutes. Bake thirty minutes in moderate oven.

Butter Scotch

3/4 cup sugar 1 tablespoon vinegar
3/4 cup molasses 2 tablespoons boiling water
3/4 cup butter

Boil ingredients until when tried in cold water, the mixture is brittle. Turn into buttered pan. Cool slightly and mark into squares.

Salad Oil Pickles

1 peck unpeeled cucumbers sliced 1/2 cup white mustard seed
2 quarts onions peeled 1/2 cup black mustard seed
and sliced 2 tablespoons celery seed
7 cups vinegar 3 cups salad oil
2 cups brown sugar

Salt
Sprinkle cucumbers and onions with salt and let stand two hours. Mix rest of ingredients, pour over cucumbers and onions, bring to a boil and seal.

Sour Cream Cake

1 cup sugar 1 1/2 cups flour
1 cup sour cream 1/2 teaspoon soda
2 eggs 1 teaspoon baking powder
1-3 teaspoon salt 1 teaspoon vanilla

Mix ingredients in order given adding the flour and baking powder and the soda to the cream. Bake in hot oven.

Green Tomato Pie

6 medium sized green tomatoes 1/2 cup seeded raisins
1 lemon cut in thin slices
1 1/2 cups granulated sugar

Boil all together until it forms a thick sauce or about fifteen minutes. Let cool before filling an unbaked pie crust. Bake until crust is done.

Fricassee Veal

2 pounds sliced veal off loin 6 slices carrots
1 small onion 2 tablespoons butter
2 stalks celery 4 tablespoons flour
Parsley

Wipe veal, cover with boiling water. Add vegetables and cook slowly until tender. Remove meat, sprinkle with salt and pepper, dredge with flour and saute in pork fat. Strain liquor (there should be two cups). Melt butter, add flour and liquor. Bring to boiling point. Season with salt and pepper and pour around meat. Garnish with parsley.

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by E. N. Cable



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So she snapped on the lights in the house and, while crutch and cane tapped an accompaniment to her eager progress, she led us through the house and exhibited her wonderful, new treasures.

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"Tell me about it," I suggested after we had exchanged greetings and I had sat for a moment enjoying with them the solemn quiet and the complete restfulness of this peaceful spot.

"Well," spoke Uncle George, "we've found we don't have to move to town. We are going to stay here and live a mighty sight easier than we ever did before."

It was dark now and he pressed a switch that made a soft electric glow spring out from the lamp over our heads. It lighted up the porch and spread out over the doorway and across the barn lot.

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Then she pointed out the snowy white kitchen sink and smiled happily as she turned one of the shining faucets and let the water gush hissing forth. Part of their new equipment, they explained between them, was an electric pump, a pump that was run with an electric motor and that stored water under considerable pressure, so that they could use it in many convenient ways.

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"Electricity is a wonderful thing," declared, "and it is almost as wonderful to think that we are making the electric current ourselves, with our own little electric plant that sits out here in a corner of the woodshed."

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"And it means we can have our hills and our orchard," she added, as we went back to our chairs on the front porch and settled down to the quiet enjoyment of the view of the rolling hills, as they stretched away beneath the moonlight, out beyond the boundaries of this happy, happy home.

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Continued from page 45

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Silo-Filling — and Goodyear Belts

An average belt-speed of 2,200 feet per minute is required to operate silo-fillers. Some average as low as 1,800, others as high as 2,600 feet per minute. Goodyear Klingtite Belts are designed to serve both speeds with unequalled efficiency and economy.

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In all farm belt work, the waterproof quality of Klingtite insures freedom from certain belting troubles too long thought unavoidable. Dew and rain do not make Klingtite stretch—nor compel new set-ups. Heat does not shrink and tighten them. Whether new or old, Klingtite Belts are weather-proof. Because they are not stitched, they are not only exceptionally limber, but they are free from

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Using the Tractor
for Silo Filling.
Specify
GOODYEAR
KLINGTITE BELTS

Copyright 1919, by The Goodyear Tire & Rubber Co.

Silo-Filling — and Goodyear Belts

An average belt-speed of 2,200 feet per minute is required to operate silo-fillers. Some average as low as 1,800, others as high as 2,600 feet per minute. Goodyear Klingtite Belts are designed to serve both speeds with unequalled efficiency and economy.

For the low-speed machines, Goodyear Klingtite Belts provide the gripping friction surface and limber pulley-hugging qualities required. For the high-speed machines the extraordinary strength combined with the friction surface and limberness of Klingtite provide a trouble-free, power-saving service unknown to ordinary belts.

In all farm belt work, the waterproof quality of Klingtite insures freedom from certain belting troubles too long thought unavoidable. Dew and rain do not make Klingtite stretch—nor compel new set-ups. Heat does not shrink and tighten them. Whether new or old, Klingtite Belts are weather-proof. Because they are not stitched, they are not only exceptionally limber, but they are free from

the ply separation caused in stitched belts when moisture and drying stretch and contract them.

For just about the same price as that charged for ordinary belts, you can get Goodyear Klingtite Farm Belts. When there is a difference in price, it is never more than a few cents per foot. The best stores in many towns are Goodyear Farm Belt Service Stations. They carry all the common sizes of endless and stitched Goodyear Klingtite—and also carry Goodyear hose and packing.

They buy direct from the Goodyear factory. If there is one of them in your town, ask the dealer to tell you about Klingtite. And ask him also for the Goodyear Farm Encyclopedia. It contains a great deal of information about farm belting problems, how to find out the size of belt you need, and how to get the most out of belts and hose. If there is no Goodyear Farm Belt Service Station in your town, write to Akron for the Goodyear Farm Encyclopedia. It will be sent you free.

THE GOODYEAR TIRE & RUBBER COMPANY, AKRON, OHIO

KLINGTITE BELTS HOSE · PACKING
GOODYEAR
AKRON



Barrett Everlastic Roofings

for your home and
all farm buildings—

NATURALLY you don't want to pay any more than you have to for good roofing, but at the same time you want to make sure that your roofs are going to be durable and trouble-proof—and in the case of your home and the better buildings you want the roofs to be *artistic*.

The Everlastic line includes "Rubber" roofing in rolls for your sheds, chicken houses, silos, etc., and slate-surfaced roofings in individual and strip shingles, as well as in rolls, for your home and your better buildings. These slate-surfaced roofings come in soft shades of red or green, and are fast color and very artistic.

Barrett Everlastic Roofings make it possible for you to have just the kind of a roof you want on each of your steep-roofed buildings at moderate cost.

And you may be sure these roofs will give you long and satisfactory service, for they are made by The Barrett Company, with more than 60 years' successful experience in roofing America's largest and finest permanent buildings.

Read the brief descriptions of the four types in the adjoining column, or, better yet, call at your dealer's and see the roofings.

New York
Chicago
Philadelphia
Boston
St. Louis
Birmingham
Seattle
Washington
Richmond

Cleveland
Dallas
Peoria
Johnstown
Latrobe

Cincinnati
Kansas City
Atlanta
Lebanon
Bethlehem

Pittsburgh
Minneapolis
Duluth
Youngstown
Elizabeth

Detroit
Nashville
Milwaukee
Toledo
Buffalo

New Orleans
Salt Lake City
Bangor
Columbus
Baltimore

THE BARRETT COMPANY, Limited:
Vancouver St. John, N. B.

Montreal
Halifax, N. S.

Toronto
Winnipeg
Sydney, N. S.

The **Barrett** Company



Group of buildings on a model farm, located in Connecticut. Illustration shows the house roofed with Everlastic Multi-Shingles and the other buildings with Everlastic "Rubber" Roofing.

Everlastic "Rubber" Roofing

A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade water-proofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions.



Everlastic Slate-Surfaced Roofing

A high-grade roll roofing, surfaced with genuine crushed slate in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.



Everlastic Multi-Shingles (4-in-One)

Made of high-grade felt thoroughly water-proofed and surfaced with crushed slate in beautiful natural slate colors, either red or green. Laid in strips of four shingles in one at far less cost in labor and time than for wooden shingles. Gives you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Needs no painting.



Everlastic Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as Everlastic Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. Need no painting.

Write for free booklet today